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As one part of a volume of abstracts of studies of the last decade primarily in the vocational and technical field, this report includes 139 abstracts in the categories of philosophy, psychology, sociology, statistics, supervision, and technical education. The abstracts in philosophy treat the development of trade and industrial education, objectives and purposes of personnel organization, and philosophical program presentations. Abstracts in psychology include acceleration programs, achievement, adolescent psycho-social characteristics, attitudes, creativity, developmental needs, enrichment, Freudian principles, gifted students, mental retardation and illness, motivation, personality, principles of learning, slow learners, special education, and vocational rehabilitation. Abstracts in sociology treat drinking problems, family, religious problems, and strikes. Abstracts in statistics involve chi-square, discrimination indices, item analyses, regression, and validity coefficients. Abstracts in supervision treat evaluation of shop layouts, interstaff communications, qualifications of cooperative teachers, shop inventories, shop management procedures and records, supervisor's handbook, and supervisory methods and guides. The majority of abstracts in the technical category report studies in specific technical proficiencies. Other parts of the volume are available as VT 005 122 and VT 005 123. (JK)

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Ohio State University

This series contains three (3) separate booklets of abstracts which are entitled as follows:

Graduate Studies In Education No. 3 - 1966

- Administration
- Curriculum
- Evaluation

Graduate Studies In Education No. 4 - 1966

- Guidance
- Instruction

Graduate Studies In Education No. 5 - 1966

- Philosophy
- Psychology
- Sociology
- Statistics
- Supervision
- Technical

PREFACE

Recent trends toward mechanized retrieval systems for educational research has initiated moves locally to abstract materials for insertion into such systems. At Stout State University, where a graduate program has been in existence since 1935, there has been no regulation effecting student abstraction of Plan B terminal master's level papers. Hence, there have not been available to research workers immediate accessability to composite results of such reports. The immediate project report is intended to supplement such reporting for those studies completed during the last decade for selected projects in vocational education, industrial education, vocational guidance, audio-visual instruction, and home economics.

The included abstracts have been developed following a standard format and from the original reports. Such abstractions are not intended to be complete for details; for such completeness, the reader should refer himself to the original report.

Much time and effort has been initiated by Mr. William Heineke in abstracting from the original manuscripts and by Mrs. Linda Jacobs and Miss Judy Kuehl in typing this terminal report. The encouragement for the completion of such a report has come from Wisconsin Directors of Vocational, Technical and Adult Schools and they, too, should be duly acknowledged for their interests.

E.W.C.
Menomonie, 1966

INTRODUCTION

"Research is . . . a prominent key essential to the opening of new doors in education"*

The original intent of this report was to have it be used as an index and reference text for educational research workers. The major interest areas are vocationally and technically oriented; thus, the contents will be most appropriate for research workers calling for such areas.

The present federal emphasis in the vocational and technical fields has made such compilations as these imperative for easy access to available sources of information. The Master's Degree level of research has been overlooked during recent times because of the larger volumes of reporting completed at the doctoral level and by professional research workers in education. This compilation of abstracts gives workers an opportunity to see resumes of master's reports for use in developing bibliographies.

Likewise, to the teacher in the classroom and to the administrator, these reports produce much needed "local" information, applicable to the situation at hand. In most instances, these projects are for Wisconsin schools, for all levels, and are specific in their influences. Others have more general implications for the educator.

The general organization for the present report was to arbitrarily categorize or classify each study under one of the eleven categories listed below:

1. Administration
2. Curriculum
3. Evaluation
4. Guidance
5. Instruction
6. Philosophy

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* E. Wayne Courtney, Applied Research In Education. (Totowa, New Jersey: Littlefield, Adams, and Company, 1965), p. 1.

7. Psychology
8. Sociology
9. Statistics
10. Supervision
11. Technical

Of the 546 abstracts which were made, the predominance of them fell in the categories of Curriculum, Instruction, and Technical. The complete breakdown of the classified studies is shown in the table below:

Categories	Numbers	Percentage
1. Administrative	35	6.0
2. Curriculum	165	30.0
3. Evaluation	13	2.0
4. Guidance	97	18.0
5. Instruction	97	18.0
6. Philosophy	4	1.0
7. Psychology	43	8.0
8. Sociology	4	1.0
9. Statistics	9	2.0
10. Supervision	12	2.0
11. Technical	67	12.0
Totals	546	100

As may be seen in the above report, there were some categories containing very few abstracts, while others were very complete. The trend for papers at Stout State University for the period covered appears to be toward "in the classroom" and "technical" types of research.

VI

Philosophy

"The most important element in research is the mind of man and very little else really matters. Today the emerging philosopher is the scientist."*

Most of the research conducted by educators is directed toward the classroom environment; however, studies are frequently produced which are more involved with such factors as objectives, organization, and purposes. Such studies as these have been categorized under the philosophy section of this report as a means of separating such studies from other categories.

Studies considered for this section of the report include the following subjects:

1. Development of Trade and Industrial Education.
2. Objectives and Purposes of Personnel Organizations.
3. Philosophical Program Presentations.

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* Cf. Courtney, loc, cit., pp. 163, 316

Brown, Rudolph, Plan For A Reorganization of the Present Industrial Arts Program In Jamaica To Provide A Measure of Vocational Training. Plan B, M.S., 1965, Stout State University, 59 pages: Adviser, Dr. Wall

Purpose of Study--

1. To survey the literature of Industrial Arts in Jamaica, England, and the United States of America, and to study the methods utilized in teaching the subject;
2. to develop a philosophy of Industrial Arts suitable to the industrial needs of Jamaica;
3. to develop a set of objectives in keeping with the philosophy;
4. to collect and organize data to be used to effect improvement in the Jamaican Industrial Arts program; and
5. to recommend desirable changes in the industrial arts program at the secondary level.

Method Used--Review of literature.

Summary and Findings--Improved technology accelerates the need for skilled workers, therefore, the school curriculum must be geared to take care of this need. The quality and scope of industrial arts in Jamaica needs improvement. The study contended that this could be achieved by introducing vocational training into the elementary and secondary schools.

Castagna, James J., The Philosophy and Development of Trade and Industrial Education on the Vocational Level in Secondary Schools in the United States. Plan B, M.S., 1955, Stout State University, 45 pages: Adviser, Dr. Wigen.

Purpose of Study--To determine the early philosophy of educators who were prominent in the growth of trade and industrial education on the vocational level in secondary schools in the United States.

Method Used--A review of the literature pertaining to the philosophy, history, principles, and aims of vocational education.

Summary and Findings--Trade and industrial education on the vocational level in secondary schools has shown a steady, marked growth throughout the years. The number of vocational students enrolled in trade and industrial education rose from 184,819 in 1920 to 765,747 in 1948. Federal aid to vocational education of less than college grade has played a large part in promoting the gorwth.

Present indications are that specialization in manufacture will continue to increase concomitantly with the high degree of industrialization in this country; therefore, in the years ahead, vocational schools will probably be called upon to render services far greater than those given so far.

Hubbard, Lewis, A Guide for the Development of Objectives and Purposes of Personnel Organizations in Industrial Arts Shops. Plan B, M.S., 1960, Stout State University, 44 pages: Adviser, Dr. Wigen.

Purpose of Study--To examine the philosophy and objectives of industrial arts and a variety of plans used currently by industrial arts instructors in order to develop a guide for a sound efficient personnel organization.

Method Used--Review of literature.

Summary and Findings--The personnel organization cannot be expected to fully prepare students for their life work. It should be thought of as a stepping stone for determining if the student is capable of holding responsibilities of leadership and, conversely, working under leadership. The objectives and purposes of personnel organizations were to:

1. Make the student cognizant of the implications of responsibility in the industrial arts shop.
2. Assist the instructor in many of the routine duties throughout the shop, thus allowing the instructor more time for actual instruction.
3. Develop in the student proper traits of leadership.
4. Provide the student with experiences in cooperation with his fellow pupils.
5. Acquaint the student with the administration of personnel organizations in industry.
6. Provide the student with situations that are similiar to those of real life.
7. Develop the student's interest in industrial arts.
8. Develop in the student proper attitudes of fellowship.
9. Develop in the student a respect for the tools, materials and machines that are found in the industrial arts shop.
10. Develop initiative in the student.
11. Develop in the student an orderly procedure in the performance of his tasks in the industrial arts shop.
12. Develop the student's character.
13. Develop in the student, citizenship and an awareness of the democratic process.

Pochanayon, Siwarn, A Proposed Industrial Education Program for the Secondary School in Thailand. Plan B, M.S., 1961, Stout State University, 52 pages: Adviser, Dr. Wall.

Purpose of Study--To examine the present program from a philosophical standpoint to determine why the program should be modified and what modifications should be made as to what should be included and excluded in the arts and crafts courses.

Method Used--Investigation of documentary data.

Summary and Findings--In order to improve the economy and the standard of living of the Thailand people toward the more adequate production of

Pochanayon (continued)

consumer goods and manufactured articles for the mass of the population:

1. Thailand needs to adapt Western techniques to better and increase the industrial as well as consumer goods production to meet the demand of the people.
2. Thailand is very well supplied with many different kinds of natural resources which can be utilized to a greater extent.
3. Based on the natural resources and supplies available in the country, the general comprehensive school program should include the areas of woodworking, electricity, leathercraft, ceramics, textiles, and drawing and planning. The number of these areas as well as the depth of each should be spread out to meet the needs of each locality and the amount of time given to the program in one year.
4. It is the main objective of the secondary school education that all youth, upon graduation, should possess at least one salable skill.

VII

Psychology

> "Much of the research utilized . . . in school problems has not been developed by education workers but from . . . related areas of psychology . . . . In the future, education may find definite answers to its problems by analyzing findings in related areas."*

The origination of ideas for research has played an important role in the direction for studying problems. Perhaps the most influential factor in this regard has been the curiosity of man himself. The constantly changing knowledge of human activity has made enquiry one of the research workers most essential and desirable traits.

Related fields to education have been active in many roles which have affected the classroom teacher's position. Nowhere has another profession influenced education more than has psychology. Hence, it is proper that studies be appropriately classified under the separate category.

Outlined and included under this category were studies following within the scope of the classifications found below:

1. Acceleration Programs.
2. Achievement.
3. Adolescent Psycho-Socio Characteristics.
4. Attitudes.
5. Creativity.
6. Developmental Needs.
7. Enrichment.
8. Freudian Principles.
9. Gifted Students.
10. Mental Retardation and Illness.
11. Motivation.
12. Personality.

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* Cf. Courtney, loc, cit., p. 28.

13. Principles of Learning.

14. Private Psychiatry.

15. Slow Learners.

16. Special Education Programs.

17. Vocational Rehabilitation.

Ammerman, Richard, Should the Mentally Retarded be Included in the Regular Curriculum of Industrial Education. Plan B, M.S., 1964, Stout State University, 43 pages: Adviser, Dr. Oetting.

Purpose of Study--To determine the degree to which special classes in industrial education promote the development of retarded children to a greater extent than by placing them in the regular classes with the regular offerings.

Method Used--Review of available literature.

Summary and Findings--Special classes for retarded students in industrial education seem justified because of the following reasons:

1. Special classes tend to improve the situation in the regular classes.
2. The instructor can devote more time to each group.
3. The content of the course can be more individualized.
4. Class competition is on a higher level.
5. Teachers maintain improved teaching efficiency.
6. The curriculum can be organized to meet the abilities of the students.
7. Normal contacts can be encouraged outside of class room situations.
8. Pupils are more homogeneously grouped.
9. The size of classes are smaller.
10. There are gains in academic achievement and sociability.

Bergvall, Deforest C., Studying and Helping the Unmotivated Students In the Ashland Vocational School. Plan B, M.S., 1961, Stout State Univeristy, 46 pages: Adviser, Dr. Oetting.

Purpose of Study--To suggest a means for improvement of the mental, social, and vocational adjustment of students who attend the part-time day class in the Ashland Vocational School.

Method Used--Historical investigation of books and other information available on mental health and guidance.

Summary and Findings--Fifty-five percent of the "compulsory-age" students attending the Ashland Vocational School have been delinquent on court records. Contributing factors:

1. High degree of poverty.
2. Existence of inconsistent morals between school and parents.
3. Tradition of welfare aid destroyed want for self improvement.

The school should provide help by:

1. Seeking to understand the whole student.
2. Improving self-understanding of the student.
3. Providing for vocational placement.
4. Providing for physiological development.

Bartelt, George R., A Descriptive Study of a Special Mathematics Class. Plan B, M.S., 1963, Stout State University, 71 pages: Adviser, Dr. Rimel.

Purpose of Study--To explore the many individual behavioral characteristics or traits which influence scholastic achievement.

Method Used--By using the case study method, it was shown that there were many behavioral patterns which influenced the members of this mathematics class.

Summary and Findings--

1. Poor study habits and/or attitudes were somewhat responsible for failure of these students to succeed and perhaps even enhanced their sense of inadequacy.
2. The tests given upon admission to college, indicated especially low ability in reading as well as general ranking in the bottom quartile based on national norms.
3. These students seemed to be quite impulsive, had poor organizational ability and failed to structure their activities.
4. The group of students indicated a lack of faith in themselves on the various tests, strong feelings of inadequacy, high dependency on others, and marked need not to be individualistic in action.
5. Many students indicated depressive feelings, much anxiety, and perfectionistic tendencies.

Thus, the most serious complicating problems for these students were related to their degree of personal adjustment. These adjustment problems seemed to interfere with their ability to produce adequately.

In conclusion, academic success seems related to the adequacy of one's self-image, the confidence he has in himself, and certain study skills. Help in these areas can only be provided for students through an expanded guidance and counseling service. Teachers must be brought into the guidance picture and do their bit in liberalizing instruction and humanizing the learning environment so that students feel they can produce.

Bennett, Erle L., A Survey of the Special Education Program At The Eau Claire North Junior High School. Plan B, M.S., 1965, Stout State University, 40 pages: Adviser, Dr. Oetting.

Purpose of Study--To analyze the present program in the aforementioned junior high school, compare it with recommendations and ideals programs, and to gather information which might prove helpful in formulating a plan for a more effective program at Eau Claire.

Method Used--The normative survey method of scientific research was employed in this study.

Summary and Findings--

1. A comprehensive testing program should be administered to the pupils before enrolling them in special classes.
2. Special classes should be limited in class size. Ten to fifteen pupils in each section is deemed advisable, but with special approval from the state department, a maximum of eighteen

Bennett (continued)

students may comprise a class.

3. A partition should be constructed in each classroom to separate different grades, thereby individualizing instruction.
4. Each instructor of mentally retarded children is advised to meet at least minimum certification standards imposed by the state accrediting agency.
5. Development of a suitable curriculum primarily emphasizes the occupational world, together with academic activities stressing general studies and basic skills vital to the program. Especially important is the development of some facility in reading.

Blinkman, Neal F., A Study of the Methods Used to Evaluate Personality. Plan B, M.S., 1958, Stout State University, 18 pages; Adviser, Dr. Oetting.

Purpose of Study--To find the most valid, practical, and objective means of evaluating personality in the general metals shop in the senior high school at Benton Harbor, Michigan.

Method Used--This study was based upon a review of the literature dealing with personality and character formation and evaluation.

Summary and Findings--The data seemed to indicate that personality can be rated by several methods with a satisfactory degree of accuracy. However, throughout the entire study, the rater was indicated as the major factor determining the value of the rating. Success with the proposed rating or any rating scale cannot be assured. The rater must train himself to be particularly objective and to divorce himself from the rating.

Bochek, Eugene Paul, A Study of Possible Approaches for Challenging the Gifted Students in High School Industrial Arts. Plan B, M.S., 1958, Stout State University, 52 pages: Adviser, Dr. Oetting.

Purpose of Study--To compile a variety of suggested procedures which could be called upon by the industrial arts instructor when the need for such procedures were evident.

Method Used--Normative method of research.

Summary and Findings--Gifted students are normal or above normal in physical and emotional health. Standardized, objective, intelligence tests were found to be the most reliable single means of identifying the gifted. These tests, fortified by parent and teacher judgement and coupled with school achievement have great reliability. The failure of gifted youths to develop their natural potentialities to the greatest is the result of a variety of factors, among which are: lack of financial resources, parental attitude, and disinterest. Acceleration, segregation, and special teachers all involve special problems of either a social, emotional or training nature. Enrichment offers the most applicable means of challenging the gifted in our nation's schools, Course enrichment must grow out of the needs of the student. Our gifted youth have been neglected in school. Gifted students can be challenged in shop courses.

Bold, Jack L., A Guide For Organizing An Accelerated Program In High School Industrial Arts for Above Average Students. Plan B, M.S., 1962, Stout State University, 23 pages: Adviser, Dr. Wiehe.

Purpose of Study--To gather information for organizing a guide for use in establishing accelerated industrial arts programs.

Method Used--Questionnaire.
Review of literature.

Summary and Findings--Given an opportunity, industrial arts teachers can provide interesting and challenging experiences for superior students.

Greater interest among these students seemed to exist when some form of acceleration was present. Informal acceleration with individual students was more universaally used. Degree of success was determined by the caliber of selected students. Many teaching techniques presently in use would probably prove sufficient if upgraded. Some form of acceleration tends to upgrade the total program.

Books, Ervin E., A Comparison of the Academic Marks of Mentally Handicapped Eau Claire Junior High School Students With Environmental Conditions Associated With These Students. Plan B, M.S., 1964, Stout State University, 37 pages: Adviser, Dr. Courtney.

Purpose of Study--The central problem of this study was to compare the academic marks of mentally handicapped Eau Claire Junior High School students with environmental conditions associated with these students.

Method Used--Review of literature.

The instrument used in this study was a questionnarie consisting of approximately twenty-five items or components. Its primary purpose was to obtain background and socio-economic information which could be used as predictive criteria for twenty-five mentally handicapped students selected as the subjects for the study.

Summary and Findings--The collection of extensive data and the review of background literature were foundations to the following conclusions:

1. There was a high correlation existing between student I.Q. and student achievement.
2. The range of intelligence and ability was broad and varied.
3. Generally, the parents of the subjects analyzed earned low salaries.
4. One-half or fifty per cent of the mentally handicapped students used as subjects lived in broken homes.
5. The incidence of divorce involving parents of the students studied occured in twenty per cent of the cases.
6. Age of parents of the mentally handicapped students was older when compared with parents of other children.
7. The parents of the children studied were largely drop-outs, and in no case did any parent attend college.
8. Parents of the mentally handicapped students used in the study were either unemployed or were found to be hourly wage earners.
9. One-half of the parents of the students owned their own homes.

Bowman, James, Relationships of Certain Attitudes and Background Factors to the Academic Achievement of A Group of Ninth Grade Students. Plan B, M.S., 1964, Stout State University, 75 pages: Adviser, Dr. Rimel.

Purpose of Study--It was the purpose of this study (1) to compare certain background factors such as father's occupation, educational attainment of parents, number of "spankings" received as a small child, and number of books in the home; (2) to show, through the use of a questionnaire, that achievers and nonachievers have different attitudes toward themselves and school as indicated by how they responded to certain items such as self-appraisal of ability, use of ability, adjustment to classmates, teachers, and school, along with how they ranked motives for doing things and factors that help achieve "success" in life; (3) to show by comparison of data collected in this study, that there were significant differences in attitudes of achievers and nonachievers as well as differences in background factors.

Method Used--Review of literature.

A questionnaire to determine certain background factors and attitudes was administered to 143 junior high school students.

Summary and Findings--

1. There were significant differences between achievers and nonachievers attitudes as well as background factors.
2. The homes of achievers reportedly had more books, their parents had completed more years of schooling, and the fathers or legal guardians were more likely to be in an occupation requiring greater academic preparation.
3. Achievers tended to rate their intelligence higher.
4. Achievers considered themselves better adjusted than the nonachievers.
5. Male achievers were more likely to choose the same occupation as their fathers.
6. Achievers consistently rated hard work higher on the six point scale.
7. The overwhelming majority of both achievers and nonachievers chose "to please my parents" as the reason for doing certain things.
8. There was practically no correlation, positive or negative, between reported number of spankings received and academic achievement.

Bratley, Richard, A Glance at Private Psychiatry in Wisconsin. Plan B, M.S., 1965, Stout State University, 26 pages: Adviser, Dr. Rimel.

Purpose of Study--The purposes of this study were:

1. To gain a better understanding of the practice of private psychiatry in Wisconsin.
2. To determine the range of cost for care and treatment.
3. To learn about the number and kinds of patients served by the private psychiatrist.

Bratley (continued)

Method Used--A questionnaire was developed which was mailed to the roster members of the Wisconsin Psychiatric Association.

Summary and Findings--While the information obtained in this investigation did not permit definite, concrete conclusions, many rather restricted generalizations and ideas were indicated:

1. The need for private psychiatry in Wisconsin is apparent, as attested to by forty-one psychiatrists seeing a total of 1,206 patients during the week sampled.
2. Private psychiatrists not only serve hospitals in treatment of both inpatients and outpatients, but also devote considerable time to community service.
3. The greater percentage of patients appear to be consultants to other agencies.
4. The cost to the patient, whether simply visiting the psychiatrist's office, or under intensive care, varies considerably.
5. The length of stay per patient under any given diagnostic catagory varies considerably.
6. The majority of private psychiatrists tend to agree that private care is more adequate than public care.

Brill, Willard T., A Comparison of the Ninth Grade Accelerated English Program at the Eau Claire North Junior High School With Selected Programs In The State of Wisconsin. Plan B, M.S., 1964, Stout State University, 48 pages: Adviser, Dr. Courtney.

Purpose of Study--This study was conducted to compare the Eau Claire North Junior High School ninth grade accelerated English program with selected programs in the state of Wisconsin.

Method Used--This study was conducted by:

1. Surveying eighteen cities in the state of Wisconsin with populations of thirty thousand or more to determine if like accelerated ninth grade English programs were in operation in those cities.
2. Comparing those programs in existence with that which existed at Eau Claire North Junior High School.

Summary and Findings--The review of the literature and the interpretation of the data collected in the study inferred the following implications:

1. By comparative standards, Eau Claire North Junior High School offers a comprehensive accelerated English program for ninth graders.
2. An extensive unit on mythology would add considerably to the course.
3. More time should be reserved for literature than for any other single unit in a ninth grade accelerated English program.
4. Reading of the novels Swiftwater and The Pearl should be required outside reading.
5. An extensive room library consisting of numerous paperbacks afford more opportunity for outside reading.

Brill (continued)

6. Weekly spelling tests should be centered around only work that has been taken during the week within which it is given.
7. Requiring an essay or term paper of at least 800 words in each of two semesters is advised.
8. Symposiums, panels, and round-table discussions successfully augment the literature program.
9. Not more than twenty-five students should comprise the enrollment for an accelerated English class.
10. Ninth graders respond well to a unit on poetry if it is administered properly.

Bunday, Glen F., A Study To Help The Industrial Arts Teacher With The Problem Of The Slow Learner. Plan B, M.S., 1954, Stout State University, 18 pages: Adviser, Dr. Oetting.

Purpose of Study--To furnish information to help the industrial arts teacher to better understand and meet the needs of the slow learner.

Method Used--Review of literature.

Summary and Findings--The course content in the shops must be selected with respect to the slow learner. He must be educated to the fullest extent of his ability. It should be remembered at all times that slow learners are future citizens of our country. It is necessary that teachers keep the genuine worth of this group ever in mind and respect them as worthwhile human beings.

Clay, Gordon, A Study of Underachievement As Indicated By the Guidance Inventory. Plan B, M.S., 1964, Stout State University, 42 pages: Adviser, Dr. Iverson.

Purpose of Study--To determine the utility of the Guidance Inventory as a means of identifying underachievers and to gain insight into the causes of underachievement of ninth grade students at Columbus High School, as indicated by the inventory.

Method Used--Review of literature.
Administration of the Guidance Inventory.
Analysis of the collected data.

Summary and Findings--The following conclusions seem to be in order as a result of this study:

1. The Guidance Inventory identified underachievers. However, without additional data, the underachievers could not be separated from the low academic performers who were included in the group.
2. Insight was gained into the causes of underachievement of ninth grade boys at Columbus High School through the use of the Guidance Inventory.

De la Cruz, Maria Advers Zita I., Creativity For Industrial Education In the Philippines. Plan B, M.S., 1963, Stout State University, 51 pages: Adviser, Dr. Wigen. ○

Purpose of Study--To identify creativity-its processes and characteristics, to point out the need for nurturing the creative in education, and to furnish evidence that creativity can be inculated into the program of industrial education in the Philippines.

Method Used--Normative survey methods.

Summary and Findings--The investigation indicated that creativity could be the answer for a more progressive Philippines. The highly creative are often troubled because they are different. They need reassurance and help from teachers and friends.

Erickson, Robert A., Psychological Implications of Competition in Adoloscence. Plan B, M.S., 1957, Stout State University, 22 pages: Adviser, Dr. Oetting.

Purpose of Study--To acquaint parents, teachers and administrators with some of the negative effects of competitive practices.

Method Used--A review of selected available literature dealing with the subject of competition was made by the writer.

Summary and Findings--Competition in the home, the school and in social life has negative effects on a child's developing personality. In the home, if one child is compared unfavorably with another repeatedly, the inferior child will develop feelings of failure and inferiority. Prolonged frustration in attempts to compete with more gifted brothers and sisters for parental favor, may initiate a definite emotional disturbance.

At school, the child who is continually on the bottom of the class is subject to the same feelings of failure. The child will undoubtedly lose self confidence and self esteem, both forerunners of more serious psychological trouble.

In addition to the home and the school, social life brings its share of frustrations to the children who have difficulty competing. Feelings of inferiority are in evidence here for those who cannot measure up to the standards set by society.

Many authors agree that parents and teachers should not teach children to attempt emulation, but rather should teach them to find joy in the activity for its own sake.

Feirn, Evelyn Lucille, The Gifted Child. Plan B, M.S., 1962, Stout State University, 34 pages: Adviser, Dr. Oetting.

Purpose of Study--The purpose of this study was:

1. To aid the staff of English teachers in the Eau Claire Junior High School in recognizing the need for the identification and provision for the gifted student.

Feirn (continued)

2. To determine the present methods employed in dealing with the education in English of the superior student.
3. To make recommendations for needed improvement after a study of the available data.

Method Used--This study included literature on acceleration, enrichment, and grouping. An interview with each English teacher preceded the distribution of the questionnarie and checklist. After the tabulation of data, summary, and conclusions, recommendations were made for further study.

Summary and Findings--In the study of meeting the needs of the gifted student in English in the Eau Claire Junior High School, it was found that no acceleration was practiced in any form. There was no ability grouping within the regular classroom. However, there was evidence that the enrichment method was practiced in some English classes in teaching the gifted student.

It was recommended that the English teachers meet and talk over creativity and provisions for the gifted. It is possible that, after group discussion of the practices of enrichment, acceleration, and grouping, the instructors would find it possible to try out one or more of these methods. This step would lead to improvement in the program for educating and cultivating the nations's most precious natural resource--the intellectually superior student.

Felland, Philip J., A Study of Industrial Arts In Special Education For Mentally Retarded Adolescents. Plan B., M.S., 1963, Stout State University, 46 pages: Adviser, Dr. Swanson.

Purpose of Study--To define and describe mentally retarded youth and suggest ways and means by which education, industrial arts in particular, can help them become happy and useful members of society.

Method Used--Survey of literature.
Interviews with special educators of mentally retarded children.

Summary and Findings--Industrial arts should have a place in special education. The methods and content of industrial arts should have a place in special education. The methods and content of industrial arts must be modified to meet the specific needs and abilities of mentally retarded individuals. Teachers of retarded pupils need to study the personal, social, physical, and learning characteristics of mentally retarded children. Insight into their peculiar traits and problems is essential if teaching-learning activities promote successful achievement for students. The responsibility for preparing retarded children for worthy adulthood rests on society in general. Studies indicate conclusively that society, as well as the retarded persons, profit in many ways from sound special education.

Gibbons, Donald H. Detecting and Meeting the Motivational Needs of the Ninth Grade Student Enrolled in Basic Electricty. Plan B, M.S., 1963, Stout State University, 29 pages: Adviser, Dr. Ruehl.

Purpose of Study--To develop motivational devices to be used to meet student needs in the teaching of electricty and in developing a greater interest in electricity. Increased interest on the part of the student should cause him to do better work and to take advanced work in the field of electricity and electronics.

Method Used--Review of related literature.
A questionnaire of student interests to determine activities for freshman students enrolled in industrial arts.

Summary and Findings--It is entirely possible for student interests to be integrated with electricity to provide an interesting and useful program for ninth grade students. No single motivational device will work with all students. The suggested activities and discussions should help in providing the student with an interesting experience.

Hoghaug, Harold T., Motivating Boys to a Study of Electricity. Plan B, M.S., 1965, Stout State University, 34 pages: Adviser, Dr. Ruehl.

Purpose of Study--To develop a list of motivating activities for the study of electricity at the eighth grade level.

Method Used--Review of literature.
A student interest and information questionnaire.

Summary and Findings--Students interests can be identified and classroom activities can be developed to motivate the eighth grade student. If an attempt is made to vary the classroom activities to meet the needs of each individual, basic electrical concepts will be instilled in each student.

Johnson, Richard A., A Freudian Meaning of the Search to Know Oneself. Plan B, M.S., 1959, Stout State University, 38 pages: Adviser, Dr. Parmer.

Purpose of Study--To become acquainted with the Freudian principles regarding the laws of mental development and the manifold differences between individuals.

Method Used--The method employed in this study was a critical interpretation of books, periodicals and biographies of the works of Sigmund Freud.

Summary and Findings--In order to achieve the good life, man needs to believe in himself and in human nature generally. Man must understand and accept as normal the pluralism of his moods and capacities, and to realize that emotion as well as reason is indispensible in the

Johnson (continued)

attainment of inner serenity. In every one of these points the nature of man, the sin of pride, the proper role of the hero in character development, religion can gain valuable aid from the best of our psychiatric schools of thought and use its influence with human beings to teach millions of normal men and women fundamental truths about their psychic and moral needs and duties.

Jolliffe, Hazel Nelson, A Study of Factors Involved in Challenging Gifted Students in High School Home Economics Courses. Plan B, M.S., 1957, Stout State University, 60 pages: Adviser, Dr. Oetting.

Purpose of Study--To compile a quickly accessible and easily utilized reference to which a home economics teacher can go to obtain suggestions for challenging gifted students.

Method Used--A study of materials in the library relating to the gifted child was required to get a basic understanding of what psychologists termed as gifted children. From that point, a thorough investigation was made of available information relating to what is being done by educators to improve opportunities for the field.

Summary and Findings--The following conclusions were drawn from this study:

1. The gifted student, with a few exceptions, will excel in any school subject.
2. The most reliable single way of identifying the gifted is through the use of objective testing devices.
3. Acceleration, segregation, and enrichment are all theories to aid the student in reaching his maximum abilities, but enrichment is the most useable means.
4. Home economics courses can challenge the gifted.
5. The rich and varied curriculum for the brilliant must grow out of the needs and interests of these students.
6. Activities must stimulate emotional urge and provide the exploration of materials.
7. The unit method of teaching which included pupil-teaching planning should be used.
8. Originality in projects and assignments should be encouraged in the student.
9. Problem-solving techniques should be employed in teaching the gifted.
10. Supplementing readings with books of advanced levels and group discussions which stimulate thinking are practical ways to enrich the course for the brilliant.
11. Experimentation in laboratory work should be permitted.

Kajihara, Frederick M., Analysis of the Vocational Rehabilitation for the Deaf. Plan B, M.S., 1956, Stout State University, 38 pages: Adviser, Dr. Wigen.

Kajihara (continued)

Purpose of Study--To determine what services have been or are currently being offered in the vocational rehabilitation program for the deaf.

Method Used--The method used was the normative survey procedure.

Summary and Findings--The writer reached the following conclusions in regard to the analysis of the vocational rehabilitation program for the deaf. These conclusions are:

1. That there is a great need for the vocational rehabilitation program for the deaf.
2. That the public should be made aware that there is such a program for the deaf person in every one of the forty-eight states and the territories.
3. That a deaf person is not a dumb person, as is believed by many people who do not know much about the deaf person.
4. That the rehabilitated deaf worker is just as capable and efficient in his work as any other normally hearing worker.
5. That the deaf person should have a right to have a place in our society.
6. That the public should support the programs for the education of the deaf.

King, Bruce S., A Suggested Program For The Mentally Gifted Student Enrolled In High School Industrial Arts. Plan B, M.S., 1963, Stout State University, 28 pages: Adviser, Dr. Prichard.

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Purpose of Study--To originate a program for the mentally gifted in industrial arts which could be used by teachers in this specific field and by the author in his own department at Hamilton High School.

Method Used--Normative method of research was used by the writer in collecting materials for this study.

Summary and Findings--Any of the special methods such as acceleration, involve problems of an emotional or social nature. Many reasons are apparent for the failure of the gifted to develop themselves to the fullest, among which are: home indifference, underprivileged background, overambitious parents, and unstimulating classes. Standardized intelligence testing is the most reliable means of identifying the gifted. The gifted are above average in every physical aspect, have superior mental health, are not one-sided in their school work, and are above average in character and personality traits. Enrichment is the most applicable technique in challenging the academically talented. The nation's schools have sadly neflected this element in our educational programs. Courses can be strengthened to meet the needs of the superior pupil. There has been a dearth of this kind of student in industrial arts.

Kroetch, George D., The Development and Application of a Mental Health Screening Device to be Used With Elementary School Children. Plan B, M.S., 1963, Stout State University, 37 pages: Adviser, Dr. Oetting.

Kroetch (continued)

Purpose of Study--To develop a method of identifying elementary school children who have problems of adjustment, and to apply this method to a group of sixth grade students.

Method Used--A comprehensive survey of literature concerned with personality, and particularly adjustment, was made to gather information concerning the criteria of good adjustment.

Summary and Findings--While no one instrument was found useful in the identification of students with problems of personal and social adjustment, a combination of instruments, both objective and subjective, seemed to give more conclusive results. As a result of the survey of literature, the following instruments were used to measure the personal and social adjustment of a sixth grade class in an Eau Claire, Wisconsin public elementary school: Mental Health Checklist, Cumulative record information, and a test of personality. While it is difficult to set any point as the line between adjustment and maladjustment, one standard deviation below the mean seemed to be quite satisfactory from subjective observation. This point was used in this study since one standard deviation below the mean included approximately 16 percent of the population. This very closely approximated the percentage of maladjustment as found in other studies.

Lehman, Flora J., A Study of Expressed Needs By Boys In Home Economics II at Wenatchee Senior High School as a Guide For Curriculum Planning. Plan B, M.S., 1965, Stout State University, 60 pages: Adviser, Dr. Rimel.

Purpose of Study--This study dealt with the reaction of high school boys, enrolled in Home Economics, to eleven problem areas on the Mooney Problem Check List.

Method Used--Review of Literature.
The Mooney Problems Check List was administered to 69 boys.

Summary and Findings--

1. The activities of Home Economics II met some of the developmental needs of the boys enrolled.
2. There seemed to be growth in understanding themselves as worthy home members.
3. Home Economics II needs some revision in order to more adequately meet the interests and needs of adolescent boys.
4. Home Economics did deal with personal-social problem areas.

Lindbo, William D., Development of a Teacher Self-Evaluation Instrument for the Encouragement of Creativity. Plan B, M.S., 1963, Stout State University, 23 pages: Adviser, Dr. Swanson.

Purpose of Study--To stimulate teachers to encourage creativity. To design a means of stimulating teachers to encourage creativity in their teaching-learning situation.

Lindbo (continued)

Method Used--Review of literature.
A documentary-frequency survey revealed a number of psychological inhibitors and facilitators of creativity.

Summary and Findings--The condition of psychological safety must be obtained for creativity to emerge. Because of the importance of psychological safety for creative ability to emerge, the person in charge of the psychological environment affects this emergence probably more than any one person outside the person who is creating.

Lindgren, Wesley A., A Study of Preventative Measures of Juvenile Delinquency in the High School. Plan B, M.S., 1962, Stout State University, 43 pages: Adviser, Dr. Swanson.

Purpose of Study--To examine the factors involved in our educational system that may tend to cause delinquent behavior, to establish some criteria that will help in the early identification of the delinquency prone students, and to present some recommendations as preventative measures of juvenile delinquency.

Method Used--Review of related literature.

Summary and Findings--It appears that in the immediate future the amount of delinquency will continue to spiral upward. It would seem that the amount of delinquency that goes undetected would exceed that which is known. Most delinquent prone children come from homes different from that of the average citizen. No two children are alike, and each must be treated as a separate entity. The role of the school appears to be such that true delinquency will nearly always be flushed out as a result of a program of child study, observation, and testing. The curriculum in most cases seems to need expanding to allow for maximum individual and social developmemt. Vocational education seems to have barely scratched the surface of its possibilities in most states. Special classes should have the goal of earliest possible return to regular classes. The good administrator seems to have a desire to avoid arbitrary rules that invite violations. One important task of an administrator seems to be to take the problems of delinquency to the community leaders and to help advancing solutions. Schools and community agencies must supplement each other in this respect.

Luetkemeyer, Joseph F., Teaching Mentally Gifted Students In Industrial Arts. Plan B, M.S., 1953, Stout State University, 26 pages: Adviser, Dr. Oetting.

Purpose of Study--To determine if industrial arts can be taught to mentally gifted students, and if so, can it effectively contribute to their development.

Luetkemeyer (continued)

Method Used--The method used was a normative survey type of research in which a documentary frequency check was made of all available literature on the developemnt of gifted students and the methods of teaching industrial arts. These were surveyed to see if mentally gifted students can take industrial arts and if industrial arts has the methods to teach the mentally gifted.

Summary and Findings--This study brought out that industrial arts can effectively contribute to the development of the superior student through the employment of the recommended techniques of teaching gifted students and through other methods of teaching native to industrial arts. The use of well organized personnel plan and the closer personal relationship to teacher and student is necessary and recommended for such training.

McGuire, George A., A Proposed Method for Motivating College Students to Higher Learning in Electricity, I.E. 206. Plan B, M.S., 1963, Stout State University, 58 pages: Adviser, Dr. Ruehl. 6

Purpose of Study--To present motivational concepts and techniques proposed by successful implementers of motivational psychology and to propose a motivational technique designed to stimulate students to maximum learning effort in Electricity, I.E. 206.

Method Used--Review of literature.
Review of instructional units.

Summary and Findings--The proposed motivational method presented in this study has the potential of reaching all students enrolled in Electricity classes. To successfully motivate college students, a variety of motivational techniques and concepts must be employed, for that which motivates one student may not motivate another. The greater the variety of motivational techniques, the greater the potential success of the motivational plan.

McInnis, Rev. T. J., Fundamental Pastoral Principles In Recognizing Mental Illness. Plan B, M.S., 1965, Stout State University, 75 pages: Adviser, Dr. Oetting.

Purpose of Study--The purpose of this study was to:

1. Point out that mental health is a major problem in the United States.
2. To acquire insight into the nature of mental illness.
3. To demonstrate the role of the pastor in recognizing major and minor personality disorders.
4. To determine the procedures to be followed by the pastor in mental illness.

Method Used--Review of literature.
A brief questionnaire was submitted to a limited number of professionals working in the area of mental health.

McInnis (continued)

Summary and Findings--The fundamental pastoral principles have been formulated under three headings:

1. The pastor as he knows and understands himself.
2. The environmental circumstances affecting the client and the pastor.
3. The client as seen by the pastor.

The procedure of classifying and identifying the mental illnesses was:

1. Symptoms in general.
2. Psychoneuroses and its symptoms.
3. Psychoses and its symptoms.
4. Hostile behavior-limited to the psychopathic personality.
5. Sex mores and mental disturbances of sex.

Moerschel, Henry G., A Study of the Place of Industrial Arts in the Special Education of Educable Mentally Retarded Students of Secondary School Age. Plan B, M.S., 1961, Stout State University, 51 pages: Adviser, Dr. Oetting.

Purpose of Study--To gain an understanding of present methods and practices used in special education in meeting the educational needs of the educable retarded student.

Method Used--This study initially involved a survey of the literature relevant to the field of industrial arts in special education and a general description of educable mentally retarded students.

Summary and Findings--Educable retarded students also develop skill in human relationships. The industrial arts teachers contend that they are unable to give these students in an integrated shop class, the attention they deserve. Where this is done, it is found that the student gains more from his industrial arts experiences, but he also loses much of what would have been gained from association with regular students in an integrated classroom. In a sense, the student may actually be losing more than he is gaining. It was felt that some of the views of the directors and supervisors of the special education and industrial arts programs are very unrealistic and not always in agreement. But the tendency is toward more homogeneous classes and away from the integrated classes.

Pratt, Donald G., An Analysis of the Results of the Minnesota Counseling Inventory Administered to the Senior Class of 1964 at Eau Claire North High School. Plan B, M.S., 1965, Stout State University, 24 pages: Adviser, Dr. Oetting.

Purpose of Study--To determine the personality differences of North High School Students as compared to the norm group of students used in the Minnesota Counseling Inventory.

Method Used--The Minnesota Counseling Inventory was administered to 174 members of the graduating class of 1964 at Eau Claire North High School.

Pratt (continued)

Summary and Findings--The differences pointed up in the study:

1. In family relations and in situations requiring conforming or responsible behavior, the North High students, as a group, compared favorably with the norm group. The norm group showed more emotional stability and a better way of dealing with reality than the North High students in this study. The boys, more so than the girls, showed a need for improvement in social skills. The boys showed less self-confidence and more ineptness in social situations than the norm group. The girls, as a whole, were quite like the comparative norms.
2. This study did not verify the personality difference between college bound and noncollege bound students that many educators assume.
3. Conflicts in family relations were shown to be much more prevelant among underachievers at North High as compared to the overachievers and to the norms. The results on the Social Relations and Adjustment to Reality scales showed the underachievers to be somewhat socially inept, often displaying withdrawal behavior. Because of this, the girls, particularly, are apt to avoid participation in groups with their peers. The underachievers are more apt to have unexcused absences and fail to hand in class assignments.

Reinert, Sister M. Paul Clare, A Survey of Decision Making Attitudes Of Adolescent Girls Toward Money Management. Plan B, M.S., 1962, Stout State University, 113 pages: Adviser, Dr. Horn.

Purpose of Study--This study is concerned with the determination of the attitudes of senior high school girls toward decisions made by family members about the use of money.

Method Used--Review of Literature.
The checking of statements on an attitude scale was the method chosen for this study.

Summary and Findings--

1. Certain definite attitudes toward money management are developed in the very young child and these attitudes have their roots in the practices and experiences of home and family living.
2. The family council, where all family members learn and decide together, is not a widely accepted practice.
3. The girls in the eleventh and twelfth grades seemed ready to participate in the decisions concerning the purchase of durable goods.
4. Decisions concerning the distribution of money among family members came from the parents.
5. Most of the students involved in this study indicated an authoritarian pattern where both parents made important decisions.
6. Attitudes held by the students toward money management often resist the behavioral changes that educators set as possible goals or objectives of learning experiences.

Reinert (continued)

7. Opionnaires and attitude studies enable the teachers to
7 understand the conflicts between the theoretical values
which they try to inculcate and the actual values and
practices which the student finds in his real life situation.

Sislo, William A., The Adaptation of Instructional Methods And Activities in Industrial Arts to a Class of Slow Learners in Superior, Wisconsin. Plan B, M.S., 1958, Stout State University, 24 pages: Adviser, Dr. Oetting.

Purpose of Study--To identify the slow learner and become acquainted with his characteristics, to obtain information concerning instructional methods and activities particularly those related to industrial arts, to provide the teacher with a guide and aid in teaching the slow learner.

Method Used--The normative survey method was used.

Summary and Findings--Since much of the satisfaction and learning comes through manual experiences, Industrial Arts plays an important part in the education of the slow learner. Units should be developed to provide opportunities for purposeful types of handwork. Gradation of problems is of prime importance and must be worked out by the teacher for each pupil. Throughout his learning much repetition and drill in fundamental processes is necessary, but should be presented in a way to keep the student interested. Information related to the subject can also be taught. In order to choose the projects wisely, the teacher should have a knowledge of the shop tools and the hand skills that are attainable at certain mental ages.

Stellmaker, Glenyce, The Influence of Clothing Upon the Personality of Adolescents. Plan B, M.S., 1962, Stout State University, 48 pages: Adviser, Dr. Barra.

Purpose of Study--To find answers for the following:

1. What are the fundamental motives for wearing clothes?
2. What is the social significance of clothing?
3. What are the psychological implications of clothing?
4. What effect, if any, do these factors have on the personality of adolescents?

Method Used--Documentary analysis.

Summary and Findings--It seems fairly certain that neither the need for protection nor innate sense of modesty was an original cause for covering the body. Therefore, the primary motive for adornment and ornamentation today which led to the adoption of clothing was decoration. It is agreed that each of the three motives has some merit. However, it can be assumed that the relation between the three sets of motives which is of greater importance to the clothes problem is that between modesty and decoration. These two motives are, in some ways, opposed to each other. Hence, people are trying to satisfy two contradictory tendencies by means of their clothes. The struggle created within themselves to satisfy these motives is enough to provoke some personality difficulties.

It has been found that a highly significant relationship exists between clothing awareness and differences in sex; girls being more aware of clothing than boys.

It was found that older adolescents tend to express sentiments of clothing deprivation less frequently than younger adolescents.

In regard to clothing influentials, it was found that an adolescent's mother and his peers were highly important persons in decisions dealing with clothing selection.

The individuals socio-economic background, interest in clothing, and attitude toward clothing may influence the psychological effects of clothing.

It was also found that color has the power to convey feelings, express moods, temperament, and illusion in costume.

It was also found that texture may be an important consideration when selecting clothes.

In regard to the physical aspects of clothing in relation to their influence on the individual, it was found that the proper fitting gives a garment the style which makes a person "feel right" in his clothes.

Sveiven, Roy, An Analysis of Selected Research on Gifted Individuals to Determine Some Common Mental and Physical Traits. Plan B, M.S., 1960, Stout State University, 27 pages: Adviser, Dr. Oetting.

Purpose of Study--To secure a comprehensive selection of mental and physical characteristics common in general to gifted individuals.

Method Used--A review of literature was the source of data in this study.

Summary and Findings--Many primary and secondary sources were gleaned in order to form a portrait of the gifted individual. Without going into great detail, which would be redundant in this study, it can be safely said that most traits which educated people consider worthwhile are much more often found in gifted individuals than they are in normal or conventional individuals.

The conclusions drawn from this study may be collectively stated as follows. Common mental and physical characteristics of gifted individuals should generate a personality which would enable the steepest obstacles to be tackled, the widest areas of ignorance to be investigated, the deepest mysteries to be plumbed, and the greatest degree of mental health to be enjoyed.

Urbanz, Marry Ann, A Study of Adolescent Psycho-Socio Characteristics With Implications For The Teaching of Clothing Selection To the Adolescent Girl On The Secondary Level. Plan B, M.S., 1961, Stout State University, 38 pages: Adviser, Mrs. Lyon.

Urbanz (continued)

Purpose of Study--To show relationships between the clothing worn and the behavior of the child, the clothing worn and the needs clothing satisfies in the adolescent.

Method Used--This work was carried out by the use of documentary or historical research.

Summary and Findings--

1. Interest in clothes reaches a high point during adolescence.
2. There is considerable conformity among teen-age girls.
3. Girls find it very important to be well-dressed.
4. There is a distinct desire for approval among girls.
5. Girls in early teens like bright colors.
6. Although color is an important factor in selecting a dress, it does not necessarily mean they select becoming factors.
7. Parents are an important influence when selecting clothes.
8. For school wear, girls prefer tailored lines and little or no ornamentation.
9. Items which girls consider in the selection of a school dress are fit, color, style, and appropriatedness.
10. Clothes are a necessarily concomitant to happiness.
11. Girls tend to be inconsistent in the attempt to keep with the incoming or waning fads.
12. Adolescents wish to wear clothes which are appropriate for the occasion.

Wallesvard, James M., An Enriched Program for the Gifted Industrial Arts Student. Plan B, M.S., 1958, Stout State University, 17 pages: Adviser, Dr. Oetting.

Purpose of Study--To determine the present trends and possibilities for enriching the industrial arts program for the exceptionally gifted student.

Method Used--Review of literature.

Summary and Findings--An enriched program can be provided through the use of the following media: free informal discussion, delegation of responsibility to the gifted, industrial arts clubs, competition between better students, creative experiences in design, and use of new materials, building confidence, development of craftsmanship, work experience programs, and "brain storming".

It is imperative that schools identify the gifted by the various means suggested. As professional people, the curriculum should be continually revised to provide the best education for the gifted.

The future, in large measure, depends upon the leadership of our gifted children. Technological advances are so rapid that our nation and our lives may depend upon our training the real leaders.

Wharton, Lionel A., A Study of Factors Affecting the Performance of Slow Learners in the General Shop. Plan B, M.S., 1962, Stout State University, 67 pages: Adviser, Dr. Christianson.

Purpose of Study--To secure information to assist in the understanding of the handicaps of slow learners.

Method Used--Review of literature.
Questionnaire check-list with letter of transmittal.
Statistical treatment of the data.

Summary and Findings--Most slow learners enrolled in general shop in the state of Maryland are affected most frequently by hearing visual impairments, emotional unstability, irregular school attendance, broken homes, slow reading ability, low mathematical ability, and a low drawing ability.

The data showed that most slow learners can develop desirable attitudes toward shop activities, perform better when there are tools and workshop in the homes, cooperate in shop organization as well as other students, and can excell in woodworking rather than in other areas of the general shop.

Willmarth, Roy, The Principles of Learning as They Apply in Teaching Machine Woodworking. Plan B, M.S., 1955, Stout State University, 34 pages: Adviser, Dr. Oetting.

Purpose of Study--To determine what implications these principles of learning have on teaching machine woodworking, and how a better understanding of the principles will be of help to the instructor in planning and in teaching his course.

Method Used--Review of literature.

Summary and Findings--It is likely that there is a direct relationship between the instructors understanding and applying these principles and his success in planning and teaching the course. If the instructor is aware of what it is that he wishes to teach, and he knows what methods and techniques are best suited to teaching it, his job will be made much easier. Some of the relations between content and method are pointed out in this report and they may be of value to the teacher already in the field as well as to the beginning teacher.

Wolff, Erwin G., Personality Through In-School Activity. Plan B, M.S., 1951, Stout State University, 73 pages: Adviser, Dr. Oetting.

Purpose of Study--To aid others in understanding more thoroughly how shop work can be employed to develop personality. To discover how personality can be modified by participating in the proper type of work activity.

Method Used--Review of literature.
A frequency study of the nature of work activities useful in the development was made.

Wolff (continued)

Summary and Findings--Industrial arts can be modified to foster personality development. The instructor can initiate minor changes in content or method which make it possible to accomplish much more in the total development pattern of the student than is normal possible through the traditional approach.

More stress needs to be placed upon creating conditions of work that simulate real life conditions. More of the activities carried on in the shop should be operated on the group basis, since group activities are much more adaptable to personality growth than individual activities.

VIII

Sociology

"In order for students to better understand the various roles played by society . . . such research is deemed essential and desirable for studies in education."*

The impact of social thought has had a definite influence upon the educational setting. The relationship between education and social thought are so closely bound that it is sometimes impossible to separate one from the other.

Because of the vocational emphasis and concentration of work at Stout State University, there have been few studies which would fall under this category. Those which have been catalogued under the sociology section are somewhat varied in subject content. This section is represented by studies relating to:

1. Drinking Problems
2. Family
3. Religious Problems
4. Strikes

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*Cf. Courtney, loc. cit., p. 226

Ainsworth, Lyda H., The American Family in a Changing Economy. Plan B, M.S., 1964, Stout State University, 22 pages: Adviser, Dr. Iverson.

Purpose of Study--To determine the forces creating the change, the effect of the change on American life, particularly on the children in the family, and the shape of the emerging pattern has been the purpose of this study.

Method Used--The investigation has followed two lines. Background study into the social patterns of American life, the economic forces creating these social conditions, and the changing roles of members of the family has been carried through reading of literature so current that it constitutes material for popular reading in magazines and newspapers, and in literature that has stood the sifting and distillation of time.

Summary and Findings--To the reasonable question, "What is being done about the problem?" sociologists, teachers, religious and community leaders answer "several things." Premarital counseling in groups and with individuals is becoming common practice. There are classes in home and family management in schools, in churches, and at community centers. Family projects are creating unity in many cases. The division of labor within the home has resulted in the assignment of definite responsibilities for certain chores to members of the family according to their abilities. Above all, there is a growing evidence of the conscious development on the part of the parents of a pattern for happy, successful living. In creating this pattern, parents have found themselves building a protective wall of good environment in which children can grow and develop into mature, useful citizens in their community.

The creation of this environment makes possible the examination of values, an examination which aids in the growth of mature judgement.

Fleming, James W., The Beer Drinking Problem of Stout's Out-Of-State Students. Plan B, M.S., 1965, Stout State University, 24 pages: Adviser, Miss Pederson.

Purpose of Study--To determine the influencing factors and reasons why Stout's out-of-state students consume beer at an increasing rate after entering college.

Method Used--The normative-survey method was used to produce the data necessary for this survey.

Fleming (continued)

Summary and Findings--The following conclusions can be made from the data obtained for this study:

1. The hypothesis was confirmed with respect to the facts that non-drinking out-of-state women went from 78% before entering Stout to 25% after entering Stout and non-drinking out-of-state men went from 52% before entering Stout to 19% after entering Stout.
2. The hypothesis that the increased beer drinking rate was stimulated by Wisconsin's lenient beer drinking laws was confirmed.
3. The acceptance of 21 year old beer laws was expressed by the fact the 23% of out-of-state women and 66% of out-of-state men were opposdd to it. In Wisconsin, 88% of the women and 87% of the men were in favor of its 18 year old beer law.

Olson, Arnold E., The Problems of the High School Age Youth As Seen by the Clergy of Menomonie, And How They Counsel Them. Plan B, M.S., 1963, Stout State University, 44 pages: Adviser, Dr. Iverson.

Purpose of Study-=To identify the problems of the high school age group in order that pastors in Menomonie may be alerted to these problems.

Method Used--The Normative Survey Method was employed. A combination of the questionnaire and interview was used to obtain information from the clergymen.

Summary and Findings--

1. The clergymen of Menomonie counsel people with all types of problems, rather than being limited to the spiritual problems.
2. There was a wide range of problems among the high school age youth, with sixty-nine different problems identified.
3. The identified problems were greater in number in the social areas of life.
4. The problems of sex were not considered by the clergy as a major problem of the high school age youth.
5. The clergy regarded the need of recreational facilities as one of the prominent social problems of Menomonie.
6. The clergymen questioned the advisability of referrals to psychiatrists.
7. The lack of places for referrals for the Menomonie clergy was considered a major problem.
8. The clergy spend less than ten per cent of their time in counseling.

Wilke, John R., Strikes 1950-1958. Plan B, M.S., 1959, Stout State University, 49 pages: Adviser, Dr. Parmer.

Purpose of Study--This study is concerned with the trends in work stopages during select years and the factors which "caused" them, such as (1) economic: wages, hours, pensions, and insurance benefits, and (2) non-economic: working conditions, union organization, and inter-and intra-union matters.

Wilke (continued)

Method Used--The method employed in this study was the documentary survey.

Summary and Findings--On the basis of the facts obtained from this study, one can draw four basic conclusions. However, one should remember that these conclusions do not necessarily have a cause-effect relationship but rather tend to correlate with each other. First, as the cost of living index went up, the number of strikes, number of men involved and the number of man-days idle tended to go down. Second, the number of men involved was dependent upon the number of strikes and the size of the plant struck. Third, the man-days idle was dependent upon the number of workers involved and the duration of strikes. Fourth, the major issues in strikes were economic as opposed to non-economic.

XI

Statistics

> "When combined in proper prospective with research principle and methodology, statistical knowledge has much meaning and usefulness."*

Although research is not statistics, the need for statistical knowledge is imperative in sophisticated research work. Without background in statistics and mathematics, research, even from the viewpoint of the consumer, is difficult to cope with and manage. Hypotheses are nothing more than qualitative statements until statistical assignments have been made toward their applications.

Studies which have been included within this section of the report are deemed representative of the caliber of work which should set the pace for quality at the masters degree level. Inserted in this section are studies involved with the following types of statistical analyses:

1. Chi-square
2. Discrimination Indices
3. Item Analyses
4. Regression Coefficients
5. Statistical Procedure
6. Validity Coefficients

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*Cf. Courtney, loc. cit., p. 187.

Houle, John M., Spatial Ability and Creativity. Plan B, M.S., 1965, Stout State University, 50 pages: Adviser, Dr. Courtney.

Purpose of Study--To investigate the statistical relationship between spatial ability and creativity of an arbitrarily selected group of college students at Stout State University during the 1964-1965 school year. The premise was made that spatial ability is a function of the creative person.

Method Used--The problem involved four major steps:

1. The selection of an instrument to measure spatial ability.
2. Selection of a population from the high scorers on the creativity tests and testing this with the spatial ability test.
3. Scoring and applying a statistical correlation to the test data.
4. Summarizing the findings, drawing conclusions in support of, or in the rejection of, the hypothesis.
5. Noting the implications of the study.

Summary and Findings--The statistical evidence derived from the test data did not support the hypothesis. For this study, the hypothesis must, therefore, be rejected. The only positive relationship in the analysis was for the male group, and this was attributed to chance.

Lanto, Kenneth, Development of a Regression Equation From Data Secured From Male Freshman Entrance Examinations and Calculations of the Validity Coefficient for the Equation. Plan B, M.S., 1957, Stout State University, 21 pages: Adviser, Dr. Jarvis.

Purpose of Study--To assist the Dean of the Division of Industrial Education at Stout State College, to identify those students who are able to do school work successfully.

Method Used--The equation was first developed by Bilse to predict first semester grade point averages of male freshmen at Stout State College.

Summary and Findings--In order to be usable, it was felt that the validity should be .70 or greater. The coefficient of validity, when calculated, was found to be .62. It was therefore concluded that the revised equation did not predict grade point averages accurately enough to be used as a predictive device.

Leider, O. John, A Comparative Study of Secondary School Achievement By Students of City Grade School, Rural School, and Parochial School Backgrounds. Plan B, M.S., 1964, Stout State University, 41 pages: Adviser, Dr. Iverson.

Leider (continued)

Purpose of Study--To determine if there was a difference among city grade, rural, parochial school elementary students with regard to mental ability, high school achievement, grade school achievement, and participation in extra-curricular activities. The four null hypotheses proposed were:

1. There is no significant difference among city grade, rural, and parochial school students with regard to mental ability.
2. There is no significant difference among city grade, rural, and parochial school students with regard to high school achievement.
3. There is no significant difference among city grade, rural, and parochial school students with regard to grade school achievement.
4. There is no significant difference among city grade, rural, and parochial school students with regard to participation in extra-curricular activities.

Method Used--The hypotheses were tested with the Chi Square Test of K Independent Samples.

Summary and Findings--All four hypotheses were rejected. However, two other conclusions were drawn from an overall inspection of the collected data. (1) Rural school children showed greater achievement in grade school and in high school than might be expected from their mental ability scores. (2) Parochial school children showed less achievement in grade school and in high school than might be expected from their mental ability scores.

Meloling, Jesse A., The Development Of A Simplified Statistical Procedure For Developing A Regression Equation. Plan B, M.S., 1964, Stout State University, 30 pages: Adviser, Dr. Swanson.

Purpose of Study--To design a simplified statistical procedure for developing a multiple regression formula.

Method Used--Review of literature.
Application of illustrative resultant to a hypothetical situation.

Summary and Findings--Procedure discussed can be very useful. Once understood, a better job of selecting students for technical education programs will be realized.

Rodger, Judy M. and Schoenberger, Laurence R., An Investigation To Determine the Validity Through Correlation and Item Analysis of the Brown-Holtzman Survey of Study Habits and Attitudes Based on the Freshman Class of 1964-1965 at Stout State University. Plan B, M.S., 1965, Stout State University, 362 pages: Adviser, Dr. Klitzke and Dr. Swanson.

Purpose of Study--To determine the validity of the total score and individual items of the Brown-Holtzman SSHA when using the 1964-1965

Stout State University Freshman class as the standardizing population, and to develop scoring keys that are more valid for Stout State University Freshmen.

This study was concerned with the investigation of the validity of the Brown-Holtzman SSHA as a predictor of academic success for Stout State University Freshmen.

Method Used--To determine the validity of the existing keys and norms, a validity coefficient was developed by correlating the Brown-Holtzman SSHA scores and first semester grade points of Stout State University freshmen. A Chi-square test of significance between Brown-Holtzman SSHA scores and grade points was calculated to further check the validity of the instruments scores.

Item analysis was used to identify those items which discriminated significantly between good and poor students. Male and female populations were studied separately. Responses found to discriminate significantly were used to formulate a more valid scoring key for the Brown-Holtzman SSHA for use with Stout State University Freshmen.

Summary and Findings--Correlation (validity) coefficients between grade point and Brown-Holtzman SSHA scores for total populations, male sample, and female sample were significant at the five percent level. No significance was found in the relationship of sub-divisions.

A two-way classification of students on the basis of Brown-Holtzman total score and grade points showed a positive relationship that was significant at the one percent level.

The existing Brown-Holtzman SSHA is a valid predictor of academic success but validity is not perfect.

Rounds, Mary, A Comparative Study of the IQ Scores Obtained on the Kuhlmann-Anderson, Seventh Edition, Booklet CD and the WISC. Plan B, M.S., 1965, Stout State University, 47 pages: Adviser, Dr. Courtney.

Purpose of Study--The central problem of this study was to determine the correlations between the IQ scores of the Kuhlmann-Anderson Test, Seventh Edition, Booklet CD, and the three IQ's derived from the Wechsler Intelligence Scale for Children--Verbal Scale, Performance Scale, and Full Scale--for a group of twenty-three fourth graders at Barstow Elementary School in Eau Claire, Wisconsin.

Method Used--The method used to compute the coefficient of correlation for the twenty-three fourth graders was the Pearson Product-Moment Correlation, Assumed Mean Technique.

Conclusions--The Kuhlmann-Anderson is not a fine, precise measure of intelligence, but for a group measure of IQ, it is useful, providing the teacher uses it intelligently, realizing it is not a measure of the child's worth, nor his sometimes-consuming desire to succeed and learn in spite of what a booklet of funny shapes, mixed up numbers with matching letters, arithmetic problems, and sentences to complete, reveal about him.

Schubert, Ronald G., An analysis of the Relationship Between Minnesota Paper Form Board Test Scores and Final Grades in Drafting (IE-101) At Stout State College. Plan B, M.S., 1963, Stout State University, 26 pages: Adviser, Mr. Erickson.

Purpose of Study--To develop in the individual the ability to perceive spatial relationships. To determine whether a correlation exists between the final grade assigned in IE-161 and the scores received in the pre-course and post course administration of the Minnesota Form Board Test.

Method Used--Review of literature.
Testing and evaluation of results.

Summary and Findings--

1. There was no significant correlation between the precourse scores received on the Minnesota Paper Form Board Test and the final grades in Drafting (IE-101).
2. There was no significant correlation between the postcourse scores received on the Minnesota Paper Form Test and the final grades in Drafting (IE-101).
3. A significant difference did exist between the precourse and postcourse scores received on the Minnesota Paper Form Board Test.
4. The ability of the student to perceive spatial relationships is being increased through instructional content in IE-101.

William, David R., Prediction of Success in Freshman Algebra at Menomonie High School. Plan B, M.S., 1964, Stout State University, 32 pages: Adviser, Dr. Courtney.

Purpose of Study--To determine whether the Orleans Algebra Prognosis Test or the Henmon-Nelson I.Q. Test can be used to predict success in freshman algebra.

Method Used--The procedures used for this study were as follows:

1. The raw test scores were obtained for the Orleans Test and were correlated with the final first semester grades of the students who enrolled in freshman algebra.
2. The Henmon-Nelson Test scores were correlated with the same class grades.
3. The computed correlations were compared.
4. A table was constructed to show a probable class grade based on any given score for the Orleans Test.

Summary and Findings--From the material presented, the study concluded that:

1. Because of its high validity, the Orleans Algebra Prognosis Test was considered to be a valid instrument which would predict success in freshman algebra at Menomonie High School.
2. The Henmon-Nelson Test was considered to have an adequate validity for predicting success in freshman algebra at Menomonie High School.

Williams (continued)

3. The degree of validity of the Orleans Test was higher than that of the Henmon-Nelson test for its predictive ability.
4. A probable grade in freshman algebra may be predicted using the regression equation results presented for the problem.
5. The Orleans Test should be retained as a predictive device.
6. The results of the Orleans Test should be used in counseling students for assignment in freshman algebra class.

Zahn, Edward J., Technical Institute Mathematics Prognostic Test. Plan B, M.S., 1964, Stout State University, 92 pages: Adviser, Dr. Courtney.

Purpose of Study--The central problem of this study was to develop, evaluate, and standardize an instructor-devised mathematics test which would predict success in Technical Mathematics 181.1 of students in electronics, residential design, and mechanical design programs at the Wausau Technical Institute, Wausau, Wisconsin.

Method Used--The reliability and validity coefficients for the instrument were computed and were considered to be acceptable for the study.

Summary and Findings--The following conclusions were developed as a result of the analyses and evaluation of the data:

1. The prognostic test scores and rank in high school jointly tended to be closely related to success in Technical Mathematics 181.1.
2. The multiple correlation procedure used in the study appeared to be a useable guidance device for predicting success or failure when considering the variables studied.
3. The test needed revision.
4. Although the relatively small population was a limiting factor, the distribution curve of the scores approached a normal distribution.
5. For guidance purposes, the information provided by the test cannot be a substitute for insight.

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Supervision

"The classroom teacher's role. . .is an ever changing composite of variables dependent entirely upon learners and their adjustment to life's problems."*

It would seem that the supervisor, if he is to be effective, should be knowledgable about research findings. Thus, the scientific approach to problem solution is almost a must if supervision is to be meaningful and progressive. As Franseth has stated:

> "The supervisor with a scientific attitude is more likely to act wisely and to help teachers do likewise than the one who makes rash generalizations. The supervisor who respects facts will not expect or want teachers to accept his judgement.... Unless they also have come to similar understandings and conclusions after careful examination of the relevant evidence."[1]

Studies which have been completed at Stout have been primarily orientated toward facility and instruction supervision. Roles in these areas reflect the needs in shop management and in teaching.

In approaching this section of the report the major types of studies included for supervision were:

1. Evaluation of Shop Lay-Outs
2. Methods of Improving Inter-Staff Communications
3. Qualifications of Cooperative Teachers
4. Shop Inventories
5. Shop Management Procedures and Records
6. Supervisor's Handbook
7. Supervisory Methods and Guides

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* Cf. Courtney, loc. cit., p. 219.

[1] Jane Franseth. Supervision As Leadership. Evanston, Illinois: Row, Peterson, and Company, 1961, p. 68.

Axelson, Paul A., A Supervisory Device for the Evaluation of Shop Layouts in the Comprehensive General Shop. Plan B, M.S., 1956, Stout State University, 34 pages: Adviser, Dr. Wigen.

Purpose of Study--To determine the factors involved in a comprehensive general shop layout.

Method Used--The normative survey by documentary frequency was the method used for this study.

Summary and Findings--It is impossible to arrive at definite requirements for a general comprehensive shop. There is disagreement as to what should be included; also, there is disagreement as to exact specifications for light, ventilation requirements and others.

Aside from the fact that it is hard to set up the check list contents, a check list is necessary if good supervision is to result.

Chartraw, Donald D., Shop Management Records for Control of Equipment and Supplies. Plan B, M.S., 1957, Stout State University, 37 pages: Adviser, Dr. Wigen.

Purpose of Study--To determine the type of shop management records for control of equipment and supplies.

Method Used--The method employed was a normative-survey of literature available.

Summary and Findings--The records necessary for such control were determined after a normative survey of literature available. The survey revealed that records would fall under one of the following main headings:

1. Method of purchasing supplies and equipment.
2. Method of inventory.
3. Method of handling shop revenue.
4. Method of annual report.

Each of the above was developed separately illustrating the suggested method for, and the record form used in, the control of handling supplies and equipment. The forms for each method were included within the paper.

Harke, Glen L., A Proposed Plan for Keeping Inventory of Equipment, Supplies and Materials in a Senior High School General Shop. Plan B, M.S., 1965, Stout State University, 17 pages: Adviser, Mr. Sampson.

Purpose of Study--To propose a plan for taking inventory of equipment, supplies and materials more efficiently and accurately in a school shop.

Harke (continued)

Method Used--Review of literature.

Summary and Findings--The study suggested that the following steps be used for taking inventory.

1. Categorize the shop
2. Give sub-units in the shop
3. Take inventory
4. Maintain inventory

Taking a physical inventory takes a lot of organization on the part of the instructor. Some helpful hints for him are listed below.

A. Draw a diagram of the shop area.
B. Use students to assist.
    1. Divide into two-man teams.
    2. Draw up assignment sheet for each team on the diagram of the shop.
    3. Provide for each area to be counted twice to double check.
C. Show students how to record each item on the cards, stressing exactness and neatness.
D. Make up tags to be attached to inventoried items.

All physical facilities should fit into one of seven categories.

1. Woodshop
2. Machine Shop
3. Plastic Shop
4. Electric Shop
5. Drawing Room
6. Sheet Metal Shop
7. General Supplies

James, Calvin E., Teaching Aids For Development of Student Personnel Safety Programs in Industrial Arts Woodwork Shops. Plan B, M.S., 1958, Stout State University, 71 pages: Adviser, Dr. Wigen.

Purpose of Study--To develop a supervisory guide to help the supervisor or instructor improve his student personnel safety program in the woodwork shop and to assist him in the development of such a program where none currently exists.

Method Used--The documentary frequency method of survey procedure was used for this study.

Summary and Findings--The conclusions were:

1. A review of literature with regard to opinions of leaders in the field indicated a need for improved and better organized student personnel safety programs.
2. A knowledge of safe practices regarding all shop tools and equipment is necessary for a successful shop safety program.
3. Because more accidents occur in the woodshop than any other shop, knowledge of safe practices cannot be overstressed.
4. A prepared checklist is an aid in the evaluation of a student personnel safety program.
5. The primary objective of the shop safety program should be to train students to meet life situations.

Kuberka, Richard F., The Qualifications and Responsibilities of the Off-Campus Cooperative Teacher in Industrial Arts. Plan B, M.S., 1956, Stout State University, 31 pages: Adviser, Dr. Anderson.

Purpose of Study--To describe the qualifications and responsibilities of an off-campus cooperative teacher and to help improve professional standards and methods of training teachers. A secondary purpose was to orient the cooperating teacher to the relative position as a supervisor of off-campus student teachers.

Method Used--The general method of securing information pertinent to this study was to review literature available in the Stout library, and to conduct personal interviews with individuals who were closely related to the field of off-campus teaching.

Summary and Findings--The caliber of the cooperating teacher can be insured by having rigid standards to follow in becoming a cooperating teacher. The qualifications should be twofold; the first is to require state restrictions for becoming a cooperating teacher; the second is to involve both the teacher training institution and the public school in the selection of personnel who are to be active participants in the program. The success or failure of the student teacher is directly correlated with the effectiveness of the cooperating teacher. The responsibilities of orientation, observation, planning and evaluation are compencies which the cooperating teacher must develop in guiding growth of student teachers.

Long, Henry J., A Guide of Supervisory Duties and Activities in School Plant Management. Plan B, M.S., 1965, Stout State University, 19 pages: Adviser, Dr. Rudiger.

Purpose of Study--To define the duties of a supervisor of school plant building management. To explain the general procedures of the functions of supervision, inspection, research, training, guidance and evaluation as to their relation to supervision in school management. To bring together under one heading the collective "know how" of many people involved in the field.

Method Used--Normative survey.
Interviews.
Observations.
Review of related literature.

Summary and Findings--Body of study consists of a development of the plant management program based upon the functions of supervision.

Loushin, Jerome J., A Supervisory Device for the Evaluation of the Demonstration as a Teaching Method in the Industrial Arts Field. Plan B, M.S., 1956, Stout State University, 48 pages: Adviser, Dr. Wigen.

Purpose of Study--To determine the criteria which exemplify the desirable characteristics in the presentation of information to the learner by means of a demonstration and, combining these characteristics into an evaluative check list.

Method Used--The normative survey by the documentary frequency method of research was employed in the study. A check list of criteria was devised for the evaluation of demonstrations from the interpretation of the selected data.

Summary and Findings--The demonstration is considered, by leaders in the field of industrial arts, to be one of the most effective means of presenting new skills to the learner. The three basic types of demonstrations are: the class demonstration, the small group demonstration, and the individual demonstration. Of the three types, the class demonstration is considered to be of most importance.

A check list was developed from the study for the evaluation of the demonstration method. The check list was designed to (1) aid supervisors in determining the status of demonstrations given by industrial arts instructors, and (2) orient industrial arts instructors as to the factors that should be present in a desirable demonstration.

Olds, James O., A Guide for Shop Management Procedures in the General Shop. Plan B, M.S., 1957, Stout State University, 39 pages: Adviser, Dr. Wigen.

Purpose of Study--To develop a guide of management procedures in the general shop which may be used by administrators, supervisors, or shop instructors.

Method Used--The method of research used in this study was primarily that of the documentary survey.

Summary and Findings--It would appear that the guide located in this paper should aid shop teachers in the improvement of their industrial arts program. It was noted that no one definite method has been submitted but that various proved methods of management procedures were listed. The teacher using this guide should choose the factors most suitable to his situation.

Pittman, Robert C., Methods of Improving Inter-Staff Communication in Vocational-Technical Schools. Plan B, M.S., 1963, Stout State University, 15 pages: Adviser, Dr. Rudiger.

Purpose of Study--To investigate possible causes for poor inter-staff communication and to suggest solutions that could improve these relationships.

Method Used--Documentary survey of literature.

Pittman (continued)

Summary and Findings--Situations will not improve unless proper motivation is used. Can not improve the situation until aware of it. Teacher is motivated to a large extent by type of supervision given. Ultimate goal should be improvement of instruction. Teacher, director, and coordinator should all be aware of needs and improvements. Large part of proper inter-staff communication is accomplished through proper administration.

Misfeldt, Harlyn T., Handbook for Supervisors of Student Teaching In Industrial Education. Plan B, M.S., 1963, Stout State University, 45 pages: Adviser, Mr. Chinnock.

Purpose of Study--To provide the background information necessary to develop a basis for supervising teachers in their work with student teachers. To provide the supervision teachers with a worthwhile professional relationship with student teachers.

Method Used--Review of current literature.

Summary and Findings--

1. The administrator of a cooperating school should regard working with student teachers as a means of upgrading his instructional staff.
2. The administrator of a cooperating school should provide orientation for the student teacher much as he would for a new staff member.
3. The supervising teacher should get to know and understand the student teacher before they begin their work together.
4. The student teacher should know and understand the supervising teacher, pupils, community, and school policies early in his student teaching experience.
5. The student teacher should be carefully introduced to the class in order to help him gain reassurance and to remove any doubts the students may have about him.
6. The induction into teaching should include a period of directed observation, participation, and responsible teaching.
7. There is no substitute for careful planning for teaching. The student teacher should be expected to take time for thorough planning. These plans should be checked by the supervising teacher before the lesson is taught. If the plans are not complete and satisfactory, they should be rewritten and checked again before the student teacher is permitted to teach.
8. Conferences should be utilized in becoming acquainted, discussing what is observed, evaluating learning, noting the growth of the student teacher, and planning next steps.
9. Whenever possible, student teachers should be given the opportunity to take part in extra responsibilities outside the classroom.
10. The effectiveness of the student teaching experience is to a large extent measured by the quality of supervision provided by the supervising teacher.

Misfeldt (continued)

11. The supervising teacher should make a sincere conscientious evaluation of his student teachers.
12. To be most effective, evaluation should be of a self-directed nature.
13. In that the success of the supervision of student teaching is dependent upon the program, it might be well to evaluate this program periodically in terms of its effectiveness.
14. A well administered student teaching program will benefit not only the student teacher, but the preparing institution and the receiving school system by its stimulus of greater endeavor, evaluation, and growth. The higher the quality of its members the greater is the effectiveness of the profession.

Schoenike, Jerald W., In-Service Workshop Program In Plastics As A Supervisory Method for the Upgrading of the Plastics Area in the Industrial Arts Program. Plan B, M.S., 1961, Stout State University, 43 pages: Adviser, Dr. Wigen.

Purpose of Study--To increase competency and knowledge in the field of supervision and to develop a basic program for in-service workshops in plastics.

Method Used--The methods employed were to review the literature relating to the field of supervision and in-service training programs.

Summary and Findings--A checklist was constructed to facilitate the planning of in-service workshops with respect to the important aspects of developing the workshop. The checklist was divided into sections entitled as follows: (1) policies for workshops, (2) arranging program for workshop, (3) workshop in action, (4) taking stock, and (5) evaluation.

A typical workshop program in plastics was described. Ananalysis checklist, program layout, and an evaluation sheet were provided for use by the plastics workshop planners.

The conclusions were:

1. Teacher planned and led sessions were often more stimulating than those led by an expert.
2. A series of short sessions were often more stimulating than one long term teacher institute.
3. Administrators and supervisors found that in-service workshops must require cooperative planning from the instructors.
4. Little work has been done in preparing industrial arts workshops at the secondary school level.

Sharkey, Leroy F., A Proposed In-Service Program In Programmed Learning For Wisconsin Vocational Technical and Adult Schools. Plan B, M.S., 1965, Stout State University, 80 pages: Adviser, Dr. Rudiger.

Purpose of Study--To furnish the administrators and/or supervisors in the Wisconsin Schools of Vocational, Technical, and Adult Education

Sharkey (continued)

with a suggested direction for introducing, selecting and utilizing the materials for programmed learning through an in-service teacher education program.

Method Used--Normative survey.

Summary and Findings--

1. Education in the Wisconsin Vocational, Technical and Adult Schools has to be constantly adjusted to keep abreast with technology developments of industry and the economic society.
2. To develop permanence and longevity in in-service programs, the following requirements are needed: (a) a specific allotment of time and funds, (b) support of the administration and the school board, (c) democratic leadership, (d) active participation by teachers and subject matter supervisors, (e) established purposes and guidelines, and (f) follow-up studies.
3. The study emphasized that the rewards of programmed learning are sufficient to merit extensive review of programmed learning by the administration and teachers.
4. A high degree of knowledge about the subject, the schools philosophy and objectives, the course objectives and purposes, the principles of teaching and learning, and the types and purposes of the programs must be known by the teachers if programmed learning is to be initiated into their curriculums.
5. Communicative materials present a very challenging task for the teacher training schools and coordinators of in-service programs. A need for in-service programs in audio-visual education is evident before programmed learning programs can be implemented into the school's curriculum.
6. Studies need to be conducted to determine who, what, when, where and how programming and programming materials will be used.
7. Successful in-service programs depend on: (a) proper environment to develop behavioral change in the teachers, (b) proper timing to create the attitude and motivation of the teachers, and (c) a need attained through the cooperation and interactions of the teachers.

XI

Technical

"Research has implication for education beyond the curriculum development program."*

Technical activities in education, while not new, have reached new levels recently in our educational enterprise. As a result of such activities, we are just now beginning to scratch the surfaces of the many programs it encompasses. There has been established, within occupational circles, a major void in the total educational enterprise which, it appears, only the post-high school technical program can fill.

Most of the research which has been conducted in technical education thus far has been completed by people who are neither directly associated with, or initially concerned with, technical education.

Perhaps one of the most elaborate and significant state-wide studies was the one conducted in Illinois by McLure and others in which need assessment was the primary issue.[1]

While organization and administration of vocational and technical program structures are important elements for decision-making in many states, Wisconsin has been fortunate in having both excellent leadership and exemplory planning in establishing its structure of programs. Hence, the major numbers of studies included within this section are those which have probed in depth into specific technical proficiencies which are given emphasis in Stout's programs of industrial graphics, graphic arts, electricity and electronics, photography, wood technics, plastics, metals, clothing and textiles, dietitics, foods, and power mechanics at the graduate level of training.

Technically-oriented studies included under this category are as follows:

1. Aluminum Color Auodizing Process
2. Amature Radio License Requirements

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* Cf. Courtney, loc. cit., p.212.

[1] William P. McLure and Others. Vocational and Technical Education in Illinois: Tomorrow's Challenge. Urbana: Bureau of Educational Research, College of Education, University of Illinois, 1960, 163 pp.

3. Art and Copy Techniques
4. Aseptic Canning Method
5. Bent Wood Laminating
6. Body Repair Work
7. Clamping Laminations
8. Cold Type Composition
9. Compression Molding Techniques
10. Coremaking Procedures
11. Cutting Fluids and Cutting Techniques
12. Dehydrofreezing and Freeze-Drying Methods
13. Design Form
14. Dietary Menus
15. Effects of Washing on Cloth
16. Fabric Construction
17. Fiber Usage
18. Food Additives
19. Forming Acrylic Plastics
20. Gypsum Cement Die For Embossing Leather
21. Ignitions
22. Industrial Metallizing
23. Investment Casting Process
24. Legal Controls on Foods
25. Lost Wax Casting
26. Marbling of Paper
27. Metal Finishes
28. Metallic Ores Used in Production
29. Metal Removing Processes

30. MIG Welding Equipment
31. Noise Control in Gasoline Engines
32. Photo-Lithography Methods and Techniques
33. Plastic Laminate Construction Techniques
34. Powder Metallurgy
35. Production Bending in Metal Fabrication
36. Production of Negatives
37. Reinforced Plastics
38. Shell Molding Machines
39. Silk Screen Stencil Copying
40. Teaching With a Pinhole Camera
41. Thermoplastic Injection Molding
42. Transistor Controlled Magnetic Pulse Ignition System
43. Welding Processes
44. Woodbending Equipment and Techniques
45. Wood Finishes
46. Wood Species

Bachler, Michael R., *An Analysis and Explanation of the Terms Used in Describing Form in Design*. Plan B, M.S., 1961, Stout State University, 33 pages: Adviser, Dr. Swanson.

Purpose of Study--To discover and explain the sensations and elements of design that supplement that which has been written on functional design.

Method Used--The sources of information for this study were several books written by authorities and research teams in the field of design.

Summary and Findings--Design is order; the order consists of sensations of harmony, balance, rhythm, stability, proportion, and emphasis as one looks at an object. The elements of design are lines, texture, volume, and mass, space, color, light, and contrast. All of these sensations and elements can be combined in many ways to give greater effect or to neutralize each other.

Beer, Grant A., *The Development and Manipulation of Equipment for Bending Wood with Liquid Ammonia to Determine Its Usefulness for the Industrial Arts Shop*. Plan B, M.S., 1965, Stout State University, 61 pages: Adviser, Dr. Piersall.

Purpose of Study--To determine if the liquid ammonia process is feasible for use in the industrial arts shop.

Method Used--Review of literature, correspondence, and experiment.

Summary and Findings--Equipment and supplies can be constructed and purchased at a reasonable cost. This method seems to be more successful than the steam method for curvatures up to 3/8 inch. Wood curvatures can be produced in a shorter period of time and more economically with the use of the ammonia technique. Can be used safely in the industrial arts shop with adequate ventilation. Wood must be bent slowly to give the structural components time to move and change location or failure will occur. The method provides new opportunities in the area of design.

Biese, Gerald H., *An Investigation of Amature Radio License Requirements*. Plan B, M.S., 1964, Stout State University, 15 pages: Adviser, Dr. Ruehl.

Purpose of Study--To identify the elements necessary to pass the FCC general class license requirements.

Method Used--Normative survey.

Summary and Findings--A basic understanding of FCC rules and regulations, symbols, Class C amplifiers, license requirements, and station requirements was found to be necessary.

Electrical units, electronic laws, use of electrical meters, tube nomenclature, circuitry signals, and frequencies available to license holders were elements that should be well understood.

Branch, Willard A., A Descriptive Study of Metallic Ores Used in the Production of Commercially Important Metals. Plan B, M.S., 1964, Stout State University, 34 pages: Adviser, Mr. Face.

Purpose of Study--To determine what ores are used in the producation of commercially important metals, their sources, location, type of deposits, mining and extraction methods.

Method Used--Review of related literature.

Summary and Findings--Table II of the study listed seventy-two mineral ores that are mined directly for the production of thirty-two commercially important metals. Thirteen metallic ores come chiefly as by-products of other mining industry, or from the production of other metals. Four metals have only one ore as their primary source.

The United States produces antimony and tin of significant value. In the world economy the United States leads in the production of ten of the commercially important metallic ores and holds a major position in the production of nine metallic ores. Nine of the metals have their ores found chiefly in vein and lode deposits. Six are found in lode deposits chiefly. Three metals have their ores found in four types of deposits; they are placer, lode vein, and open pit. Three metals have their ores found chiefly in vein deposits.

The majority of the thirty-two ores of these metals are commercially important due to the size of the operation and the quality of the end product.

Hydrometallurgy is used on seventeen of the metal ores in some phases of the extraction. Pyrometallurgy is used on sixteen of the metals and electrometallurgy is used on thirteen of the metals. In many cases any one of the three methods may be used on the ores of the same metal. In some cases, however, there is only one method used.

Bray, Danial, Plastic Laminate Construction Problems. Plan B, M.S., 1962, Stout State University, 25 pages: Adviser, Dr. Swanson.

Purpose of Study--To present plastic laminate construction techniques which could be incorporated into the industrial arts school shop situation.

Method Used--Review of literature, visit to industrial shops, and construction of sample illustrative models.

Summary and Findings--The purpose of this study was to present plastic laminate construction techniques which could be incorporated into the industrial arts classroom. The three basic materials needed for plastic laminate construction were discussed. These materials are the plastic laminate, care material, and adhesive. The study discussed methods of joining core and surface materials. The methods included were the corregated fastener, wood spline, double spline, and metal fastner.

Methods of treating edges were included. They were the uncovered edge, plastic edge, hardwood edge, metal edge, and self edge banding. The joining of surfaces meeting perpendicularly was discussed. Butting surfaces, bending of edge banding, stainless steel cove molding, and postforming were included.

A Minimum amount of published material on the subject was found. Most of the information presented was gained by the author's work experience with plastic laminates and visits to Wisconsin Fabricating firms.

Brown, Martin, Experimental Research in the Problem of Clamping Laminations. Plan B, M.S., 1962, Stout State University, 42 pages: Adviser, Dr. Swanson.

Purpose of Study--To test and evaluate pneumatic and hydraulic methods of pressure application in lamination.

Method Used--Review of literature and experimentation.

Summary and Findings--It is possible to produce successful laminations by pneumatic and hydraulic pressure application in the general school shop. The pressure pad was proven to be an effective aid in providing sufficient pressure to force and hold the lamination in the desired shape. The pressure tube was tested and shown to produce an excellent specimen of lamination. The method of resistance heating was an effective means of rapidly curing the adhesive.

Chang, Soon Youl, An Investigation of the Effects of Machine and Hand Laundering of Cotton, Rayon, and Wool. Plan B, M.S., Stout State University, 66 pages: Adviser, Dr. Barra.

Purpose of Study--To determine the effect that washing has on the strength and abrasion resistance of cotton, rayon, and wool washed by machine and hand.

Method Used--Reveiw of literature and experimentation.

Summary and Findings--The cotton samples washed by machine showed higher strength than the samples washed by hand in most of the cases after the final cycle. It might be economical to use machine washing for the cotton materials.

The rayon samples laundered by hand showed higher strength than the samples laundered by machine after the twentieth cycle. It would be helpful to wash rayon by hand.

The wool samples washed by machine were stronger than the samples washed by hand in every case after the final cycle, but shrinkage was greater than hand washed samples.

Claflin, David K., The Laminated Bow. Plan B, M.S., 1961, Stout State University, 28 pages: Adviser, Dr. Swanson.

Purpose of Study--To determine the best means for constructing a laminated wood and fiberglass bow in a school situation.

Method Used--Review of literature.
Experimentation by actual construction.

Summary and Findings--Some of the problems related to this project which should be further studied are:

1. The development of a clamping device to shorten the gluing procedure.
2. An experiment in various types of adhesives should be tried in connection with this project.
3. A more exact method of determining the actual weight of the bow should be found before shaping the bow.
4. If this project is to be used in a school shop situation, only advanced pupils should be allowed to construct a bow of this kind because of the exactness and skill required in obtaining an acceptable bow.
5. That different profile shapes be tried to develop a bow which produces less stacking, better cast, and a smoother draw.

Coerper, Dewey A., Marbling With Varnish Base Inks As A Unit For High School Bookbinding. Plan B, M.S., 1964, Stout State University, 54 pages: Adviser, Mr. Whydotski.

Purpose of Study--To enable the student or amateur marbler to produce a sheet of marbled paper, marble book edges or book covers with a varnish based ink, but still retain the brilliant colors of the ink, and to determine the advantages and disadvantages of using a prepared gum tragacanth size to that of the unprepared size (water) when using varnish based ink.

Method Used--Experimental and descriptive.

Summary and Findings--The study showed that marbling with gum tragacanth as a size is highly recommended when teaching a unit in bookbinding in a general graphic arts course. Successful patterns and designs can be obtained using gum tragacanth. Book edges can be marbled simpler and easier than using a water base color.

Conlon, Alice M., The Revision of Cycle Menus to Give Proportioned Fat and Proportioned Carbohydrate in the General Diet in a Private Hospital. Plan B, M.S., 1965, Stout State University, 100 pages: Adviser: Miss Meiller.

Purpose of Study--To show modifications necessary to meet the standards for proportioned fat and proportioned carbohydrate in the diet which can be of great benefit to dietitians and to people in the field of food and nutrition.

Conlon (continued)

Method Used--The normative survey method was employed with a review of the literature.

Summary and Findings--The proportioned fat and proportioned carbohydrates diet appears to be a high caloric diet for a hospitalized man who is necessarily less active than normal. The original menus were high in food energy value, and no major changes were made in energy value when making the menu revisions.

If this diet was consumed in the hospital as a general diet, the patient would have to adjust his eating habit from one of eating many foods containing sucrose to one of eating more complex carbohydrates from bread and starchy vegetables.

Conway, Martin, The Role of Powder Metallurgy In Industrial Productions And Its Implications For Industrial Education. Plan B, M.S., 1962, Stout State University, 20 pages: Adviser, Dr. Rudiger.

Purpose of Study--To identify, analyze, interpret and select content material for information on powder metallurgy, as part of a resource unit for the metals area of vocational and industrial education.

Method Used--Review of available literature.

Summary and Findings--Trend is for more progress and new and better developments in this area. This phase of metal work is a fast moving area with a good potential for advancement in the future.

It is difficult to equip a school shop to demonstrate the powder metal process. Related information should be provided to acquaint the student with this process.

Engstrom, Darlene J., An Investigation of the Aseptic Canning Method of Food Preservation. Plan B, M.S., 1964, Stout State University, 39 pages: Adviser, Miss Carrison.

Purpose of Study--This study was concerned with the process of high-temperature short-time sterilization combined with aseptic canning and its application to preservation of food products.

Method Used--The method used for this study was a review of the literature reporting relevant, up-to-date information on the aseptic canning method.

Summary and Findings--Aseptic processors have grown from one plant in 1950 to nineteen in 1953 and as estimated seventy in 1963. In 1961 there were fifty-five asceptic systems in operation and one-half of these installations were put in between 1959 and 1961. At this time, almost every major dairy has installed either a pilot plant or production facilities. The manufactures of aseptic processing equipment invite dairymen to participate in new markets and larger profits, thanks to aseptic canning.

Gibbons, Roger A., Design and Layout Techniques For Production Bending In Metal Fabrication. Plan B, M.S., 1965, Stout State University, 33 pages: Adviser, Dr. Wiehe.

Purpose of Study--To collect and organize emperical knowledge of techniques used in modern industry in the metals field with relation to bending of metals.

Method Used--Review of related literature.

Summary and Findings--There are many problems involved when bending a piece of metal in a production situation and tomorrow's technician must have the knowledge required to solve these problems. The technician can be equipped with problem solving techniques by the industrial arts and vocational instructor and need not rely completely upon industry for this education.

Halvorson, Mildred, A Critical Study in Fiber Usage By Women For Lingerie From 1940-1960. Plan B, M.S., 1961, Stout State University, 46 pages: Adviser, Mrs. Lyon.

Purpose of Study--The purpose of the study was to survey the fibers selected for slips and underpants by consumers over the past twenty years and to examine the reasons why each has been chosen or rejected.

Method Used--To carry out such a study, the author used a documentary-questionnaire normative survey.

Summary and Findings--From this study one observes that the consumer wants lingerie that is easy to care for, comfortable, strong, yet inexpensive. If manufacturers want their fibers to be accepted by the consumers, they must be sure that they possess the above properties.

Hansuld, George A., The Design, Construction and Testing Of Woodbending Equipment. Plan B, M.S., 1961, Stout State University, 29 pages: Adviser, Dr. Swanson.

Purpose of Study--To develop bending and plasticizing equipment that is simple to build, reasonable in cost, adjustable to various sizes of bends, and adaptable to use by junior and senior high school students.

Method Used--For the study, the following steps were used:

1. General theory of woodbending and a list of specific problems to be used were established.
2. The design and construction of plasticizing equipment were developed.
3. Design and construction of bending equipment
4. Testing of the equipment and recording results.

Summary and Findings--On the basis of the experiment, the following conclusions were developed: Wood must be thoroughly plasticized before it can be bent without failure. Soaking in water and boiling in water is the most successful method of plasticizing. Wood must be bent very slowly to give it time to move and change shape. End pressure control is very important. Wood must be held rigidly while bending. Wood must be held in bent shape for at least twelve hours for drying.

Harrison, Patrick, A Report on the History, Construction and Procedure of the Aluminum Color Anodizing Process. Plan B, M.S., 1965, Stout State University, 27 pages: Adviser, Mr. Klatt.

Purpose of Study--To give an explanation of aluminum anodizing and to show how the sulphuric acid direct current process of anodizing can be performed in the school shop.

Method Used--A study of all related literature available. Correspondence with manufacturers using the anodizing process. Interviews with people who are directly involved in the anodizing process. End construction and experimentation with an anodizing facility.

Summary and Findings--The aluminum anodizing process plays an important role in the aluminum industry today. The cost of installing the anodizing process would not be prohibitive in most public school systems and seems advisable to include in the curriculum. The process gives a highly desirable finish and utilizes the principles of physics, chemisty and electronics.

Haug, Yvonne Olson, A Review of the Literature on the Dehydrofreezing and Freeze-Drying Methods of Food Preservation. Plan B, M.S., 1965, Stout State University, 37 pages: Adviser, Miss Meiller.

Purpose of Study--To help homemakers acquire basic information for the use of dehydrofrozen and freeze-dried foods and food products in order that they may be used to better advantage in the home.

Method Used--Review of literature.

Summary and Findings--

1. Dehydrofrozen and freeze-dried processes have fulfilled a need in the preserving of foods.
2. There are some real advantages to freeze-dried foods. Since they do not require storage at zero degrees they are less likely to lose quality during the marketing process or in home storage.
3. They do not require refrigeration and it is possible to prepare them more quickly than some frozen foods because they can be reconstituted in a few minutes.
4. They are light in weight and this light weight not only means decreased costs in distribution and storage, but is an advantage to campers, food for space travel, as well as institutional and military use.
5. Freeze-dry is a most promising food preservation technique. It opens up a new field with unlimited possibilities for preparation of ready-to-cook dishes.

Haug (continued)

6. Freeze-dried foods are available on a limited market at present because of their cost. Widespread use awaits lower production costs.
7. Product appearance presents a difficulty in consumer acceptance. Meats look quite unappetizing without their natural moisture. Light affects the product so transparent packaging cannot be used. Consumers prefer to see what they buy, especially with meat.
8. Through education and a better understanding of the products by the consumer, a general breakthrough in sales will occur which has been delayed up to now.

Hauser, Roger E., A Guide to the Correct Selection and Use of Cutting Fluids in School Shops. Plan B, M.S., 1962, Stout State University, 49 pages: Adviser, Dr. Wiehe.

Purpose of Study--To formulate an informational unit on cutting fluids.

Method Used--Review of literature.
Letters of inquiry.

Summary and Findings--The cooling ability or the power of a fluid to remove heat from the critical cutting area is the most important factor in selection. Best results when applying fluid are obtained with large fluid volume under low pressure. It is important that cutting fluids be stored indoors at room temperature whenever possible to avoid product breakdown. To extend the service life of cutting fluids, one must be aware of sources of contamination and remove chips and dirt as soon as possible. Soluble oil rancidity conditions must be recognized by teachers and users and steps must be taken to make conditions sanitary.

Hesse, Thurman D., Development of Molding Machine For Expandable Polystyrene Plastic. Plan B, M.S., 1965, Stout State University, 20 pages: Adviser, Mr. Erickson.

Purpose of Study--To advance the industrial education facilities toward more realistic processes in the rapid achievements that industry has made in the field of plastics and synthetics.

Method Used--Review of literature.
Construction of pilot machine.

Summary and Findings--Preliminary tests indicated that the MMEP's systems were basically sound.

Hoeffner, Lloyd C., An Annotated Reference List of the Graphic Arts Books In The Robert Pierce Library At Stout State College. Plan B, M.S., 1961, Stout State University, 100 pages: Adviser, Mr. Whydotski.

Hoeffner (continued)

Purpose of Study--To compile a reference list of the graphic arts books in the Robert L. Pierce Library.

Method Used--Review of literature.

Summary and Findings--The entries cover the graphic arts and related areas. The entries were arranged alphabetically with a short annotation following each one.

Howard, Eleanor, *A Survey and Evaluation of Clothing Construction Techniques Required with Synthetic Blends and Washable Woolen Fabrics*. Plan B, M.S., 1962, Stout State University, 28 pages: Adviser, Dr. Barra.

Purpose of Study--To determine the change in clothing construction techniques which will be necessary to use with four synthetic blends and washable woolen fabrics.

Method Used--The methods used were a review of literature obtained from periodicals, books, and research done by manufactures on synthetic blends and washable woolen fabrics as to sewing methods recommended to use with these fabrics.

Summary and Findings--The conclusions are limited to the four blends and the washable woolen fabrics with which the experimenter worked.

1. These four washable woolen and synthetic fibers will ease or shrink to fit.
2. Fabric distortion due to tension can be checked by using a loosened tension.
3. Fabric distortion due to differential feeding can be stopped by loosening the pressure foot spring to the lowest level consistent with good sewability, and by applying a slight tension with one hand on either side of the sewing area.
4. The heat of the iron should be checked on a sample of the fabric before pressing the garment. The rayon setting on a steam iron is usually the best for synthetic fabrics.
5. Fabrics that are washable may still shrink considerably when washed.

Iannone, Pat A., *Some Pen and Ink Techniques for Offset Lithography*. Plan B, M.S., 1963, Stout State University, 88 pages: Adviser, Mr. Whydotski.

Purpose of Study--To present a guide to pen and ink techniques for the student or master printer.

Method Used--Review of related literature.

Summary and Findings--Pen and ink techniques are suitable for rendering illustrations for printing by offset lithography. Ink allows for rendering in many techniques which can be developed by the offset printer. When completed with good materials, the originals are as lasting as any piece of art work may be. The possibilities of reproduction by the offset process are superior to any other type of illustration. This report has shown the many characteristics of ink rendering include:

1. It has directness in that the touch of the pen leaves a mark that has the look of finality.
2. It provides many techniques for rendering an illustration economically and effectively.
3. Because of the many tone and textures possible in this medium, an illustration can be reproduced with photographic like qualities. It is a media that should be mastered and understood by the offset lithographer.

Johnson, Jay P., Common Basis Types of Organic Metal Finishes: Their Characteristics and Uses. Plan B, M.S., 1964, Stout State University, 37 pages: Adviser, Dr. Face.

Purpose of Study--

1. To describe the most commonly used organic metal finishes.
2. To examine the characteristics of these finishes.
3. To investigate the more common methods of preparing metal surfaces and applying finishes.

Method Used--Descriptive research type.

Summary and Findings--The most common finishes were determined through correspondence with various industries and by means of an interview with a metal coatings technician. It was concluded that the general nature of these finishes is that they are quick-drying and produce a plastic film which is tough and durable. Metal surface preparation is utilized to remove soil or foreign matter. Excellent finishes, to function at their maximum, must be preceded by intelligent surface preparation to insure greatest possible adhesion.

Johnson, Karen LaVone, A Study Of The Freeze-Drying Method. Plan B, M.S., 1961, Stout State University, 86 pages: Adviser, Miss Meiller.

Purpose of Study--This study is concerned with the process of freeze-drying and its application to the preservation of food products.

Method Used--The first section of this study was a review of literature which included the reading and reporting of relevant, up-to-date information on the freeze-drying foods. The second portion included the observation of several selected freeze-dried food items.

Summary and Findings--Because the eventual popularity of freeze-dried foods depends upon their successful introduction to the homemaker as convenient food items, and upon her acceptance of these foods in comparison with other prepared by different methods, the responsibility of the home economics teacher is real and immediate. Therefore, she should spend the brief time and effort necessary to acquaint herself with this important new type of food preservation so she may provide that information to todays' consumers and to the homemaker of the future.

Johnson, Loren R., A Study To Develop The Possibilities of Teaching Photography With a Pinhole Camera. Plan B, M.S., 1961, Stout State University, 31 pages: Adviser, Mr. Whydotski.

Purpose of Study--This was an experiment to investigate the possibilities and the use of a pinhole camera and to select the best construction materials, film, developer, pinhole size, and exposure time for optimum results when used by graphic arts students.

Method Used--Review of related literature.
Experimentation.

Summary and Findings--It was possible to teach photography with the use of a student constructed pinhole camera. Some conditions and materials appeared to give better results with pinhole cameras. These conditions and materials were:

1. Pinhole size made by #11 sharps needle.
2. Film Super Panchromatic type B sheet film.
3. Any prescribed film developer will give acceptable results. Good results may be obtained by extending the developing time by approximately 2 minutes.
4. Contact paper types F-2 and F-3 gave good results depending on the contrast of the negative.

Kesanen, Byron, A Resource Unit On The Theory Of Operation Of Selected Welding Processes For Use In Vocational Education. Plan B, M.S., 1965, Stout State University, 30 pages: Adviser, Mr. Halfin.

Purpose of Study--To provide a composite of technical information on the theory of operation of presently developed welding processes, from which the instructor can draw material for building a teaching unit.

To offer a brief summary of applications, advantages, and disadvantages of the presently developed welding processes.

Method Used--Normative survey by documentary frequency.

Summary and Findings--Many of the new welding processes are developments of established processes and have either specialized applications or are used mainly to exercise greater control, such as heat, distortion, or atmospheric contamination.

Knudson, Gilmore O., A Proposed Resource Unit On Lost Wax Cast In Industrial Arts. Plan B, M.S., 1963, Stout State University, 40 pages: Adviser, Dr. Wigen.

Knudson (continued)

Purpose of Study--To provide the industrial arts instructor with a resource unit in lost wax casting that will establish a definite step-by-step procedure in the form of instructional units and to establish the necessary equipment, tools, materials, and facilities needed to develop a course of study in art, metal, and jewelry in industrial arts.

Method Used--Review of related literature.
Experimentation.

Summary and Findings--The main body of this resource unit was the procedural steps which give a very complete and thorough understanding of all the various procedures involved in developing a project and following it through to completion. These procedures have been established through experimental research and have proven to be the most effective and efficient methods of producing a project.

Kveton, Richard G., Production of Negatives for Offset Lithography With Limited Equipment. Plan B, M.S., 1961, Stout State University, 15 pages: Adviser, Mr. Whydotski.

Purpose of Study--To develop a method of producing negatives with reasonably inexpensive equipment.

Method Used--Review of literature.
Study in the form of an experiment.

Summary and Findings--There is a need for teaching the principle of photo-lithography in the school. Large equipment, such as the commercially built copy camera, requires more floor space and is too expensive for most schools and small shops. Therefore, by using a view camera as a means of producing negatives for offset lithography, students of graphic arts are able to have experiences in the areas of photocopying and platemaking. Experiments in photocopying with a view camera was possible. As a means of saving money and time, small shops could use the view camera for many of their lithographic jobs. Also, because it can be used for other photographic purposes, the view camera could serve a dual purpose, which would be an advantage to the school with a limited budget.

Mehne, Herbert, Injection Molding for the Industrial Arts Shop: An Overview of the Process and Materials and an Experiment in Mold Making and Procedures. Plan B, M.S., 1962, Stout State University, 46 pages: Adviser, Dr. Swanson.

Purpose of Study--The purposes were to provide background information for the teacher of industrial arts concerning the process, several suitable materials, and equipment; and to adapt procedures for molding thermoplastic in the school shop.

Mehne (continued)

Method Used--Review of literature and experimentation.

Summary and Findings--A metal or non-porous substance is the best material for patterns. Using a split pattern and pouring the second half of the mold against the first half is the recommended procedure for registering mold cavities. Injection of the molten plastic at the parting line proved to be the best method of filling the mold cavity. No ejection system is necessary with the Simplomatic machine. The flask method of pouring the mold block proved to be the most satisfactory method. Curing the molds at 250°F. for twelve hours gave a heat resistant, high strength mold.

It was concluded from the experiments, that Rowe's machine was unsuitable for use in the school shop. The same procedure of mold making used with Rowe's machine, was adapted for the Simplomatic machine. It was concluded from the experiments with the Simplomatic machine, that 375°F. is the best temperature to mold styrene. The recommended ram dwell is ten seconds and the mold closed time is one minute. The recommended injection temperature for polythylene is 400°F. The ram dwell is ten seconds and the mold closed time is one minute. The mold closed time for both styrene and polyethylene includes an allowance for the heating of the mold from machine operation.

Meredith, Patricia L., The Clan Tartans and District Checks of Scotland. Plan B, M.S., 1965, Stout State University, 98 pages: Adviser, Dr. Barra.

Purpose of Study--To seek out other sources for the information and compile it into a useable form for others interested in this subject.

Method Used--The basic method of research for this study was documentary frequency.

Summary and Findings--The clan tartans and district checks are no longer limited to Scotland and have for many years been influencing the fashion trends of the world.

It appears that no one can pin-point exactly the beginning of the tartans and the checks. However, this does not make them any less valuable or have less influence today. Rather, it tends to show that they are of more influence and lasting value because they are the result of the efforts of a group of people to preserve that which for many years had personal meaning to them.

Muller, Arthur E., An Introduction to Understanding and Operating MIG Welding Equipment. Plan B, M.S., 1965, Stout State University, 42 pages: Adviser, Mr. Halfin.

Purpose of Study--To assemble in one reference the necessary definition of terms, description of equipment, and methods of application to convey comprehensive understanding of this welding process.

Method Used--Review of related literature.

Muller (continued)

Summary and Findings--The MIG welding process is helping satisfy the demands for higher productivity in industry. The efficiency of the process is continually being improved and new applications not thought possible before. It is an important fabrication technique that warrants major consideration. If the cost of the equipment prohibits having it in a school shop, at least the general principles of the technique should be taught.

Munsen, Steven L., An Experiment Using Epoxy Resin Molds for Expandable Polystyrene Molding. Plan B, M.S., 1962, Stout State University, 48 pages: Adviser, Dr. Swanson.

Purpose of Study--To determine if molds of fairly simple design could be successfully constructed from epoxy resins and glass cloth laminations, and then be satisfactorily used for expandable polystyrene molding in a school shop.

Method Used--Survey of technical literature.
Experimentation with molds.

Summary and Findings--It may be said that expandable polystyrene molding with epoxy resin molds is possible but from the results of this study it is not practical or recommended. Epoxy resin is an excellent mold making material if the mold does not have to be exposed to an excessive amount of heat. A thick section epoxy mold insulates the beads in the mold cavity and expansion will not take place. A thin section epoxy mold does not insulate the beads but it is not stable enough to withstand the heat required in this method. Continued heating and cooling of the thin section mold causes considerable warping and cracking of the epoxy. The dry heater panel method of pre-expansion was slow but satisfactory. Filling the mold by means of air pressure was suitable.

Niederberger, William A., A Study of the Development of Typographical Letter Forms. Plan B, M.S., 1963, Stout State University, 43 pages: Adviser, Mr. Whydotski.

Purpose of Study--To illustrate the development of letter forms and some factors of influence in their formation.

Method Used--Review of literature.

Summary and Findings--The study indicated that the development of letter forms will continue on a recurring basis. Tradition has appeared to be dominant and will most probably continue to be. The lack of population, education, and communication offered prime reasons for the stagnancy in the beginnings of letter form development. It appears that the stock used in printing has more influence on the letter form than does the process. This restriction is determined in good taste and practical. With modern technological versatility, it is difficult to assume that any particular type face can be limited to a single process of reproduction. The best that can be done appears to be an exercised skill in selection of a type face for a given means of printing.

Noll, Donald H., Analysis of Related Information in Photolithography in Graphic Arts for Secondary Education. Plan B, M.S., 1961, Stout State University, 30 pages: Adviser, Dr. Wigen.

Purpose of Study--To analyze, by documentary frequency method, related information presented by authors who have written in the photolithography area of the graphic arts field.

Method Used--Literature in reproduction and related areas of work in graphic arts was reviewed to determine its suitability for this study.

Summary and Findings--This study was primarily concerned with the selection of the related information of various authors in the area of photolithography in the field of graphic arts.

Through the review of literature concerning several authors opinions, the criteria for the selection of textbooks for effective learning was as follows :

1. Interest and comprehension.
2. Mechanical text construction.
3. Inclusion of methods of study.
4. Organized instructional material.
5. Instructional aid.
6. Point of view.
7. Pertinent subject matter.
8. Arrangement of educational material.
9. Valuable reference materials.
10. Unification of teaching units.

General objectives of industrial arts and specific objectives for photolithography were developed through the review of literature. This was a basis for the preparation of instructional units for presenting related information in photolithography.

Related information content was identified and prepared by analysis of selected textbooks in the field of photolithography. Twenty major headings of related information content were prepared. A table was prepared to identify the sources of related information content as the result of the analysis of thirty-nine textbooks in the field of photolithography.

Papatriantafyllou, Carolyn, An Experimental Study of the Wash-and Wear Properties of a Man-Made Fiber as Compared With A Wash-and-Wear Natural Fiber. Plan B, M.S., 1965, Stout State University, 102 pages: Adviser, Dr. Barra.

Purpose of Study--To make use of recent research of textile manufacturers and their points of view in regard to Wash-and-Wear, and also to conduct tests in the experimental laboratory at Stout State University.

Papatriantafyllou (continued)

Method Used--Review of literature.
Experimental method.

Summary and Findings--The dress test specimens, including the control test samples from each fiber, were subjected to yarn counts, dry and wet breaking strength tests, wet and dry tearing strength tests, dry bursting strength tests, wrinkle recovery and colorfastness tests. The specimens were tested, the averages were computed and recorded and evaluated, and the findings were reported.

In the final analysis, the 50 percent Dacron and 50 percent cotton blended fiber evidenced a more satisfactory performance than the 100 percent cotton natural fiber.

Paske, Richard O., A Study of Making Negatives with 4X5 Cameras for Offset Lithography in the High School Print Shop. Plan B, M.S., 1965, Stout State University, 28 pages: Adviser, Mr. Whydotski.

Purpose of Study--To investigate the possibility of teaching offset lithography copy work with a standard four by five press or studio camera. Specifically, it attempted to show the possibilities of making line copy negatives, halftones, enlargements, and reductions.

Method Used--Method of solution was based on experimentation with the four by five camera. It included experiments in taking pictures of copy, in developing negatives, and in stripping up negatives.

Summary and Findings--It is possible to teach a unit on making negatives for offset lithography with a 4X5 press camera. These basic areas could be covered quite effectively:

1. Enlarging and reducing.
2. Copying line copy.
3. Copying halftones.
4. Producing halftones.

The finished product can be equal quality to that of a copy camera's product. The procedures are not as easily accomplished with a 4X5 camera as with a regular copy camera. A basic course in making negatives for offset lithography could be taught effectively. This procedure should be temporary until standard copy equipment can be secured.

Patt, Leo M., A Resource Information Unit in Cutting Techniques for Oxy-Acetylene and Arc Welding. Plan B, M.S., 1962, Stout State University, 49 pages: Adviser, Mr. Halfin.

Purpose of Study--To prepare resource units on related technical information in cutting techniques for oxy-acetylene and arc welding specifically dealing with the following processes: plasma arc, arc-air (carbon arc), oxygen (oxy-acetylene), heliarc (constricted tungsten-arc), under water cutting (arc-oxygen, metal arc, oxygen hydrogen), and flux injection and iron powder process.

Patt (continued)

Method Used--The normative survey method of research by use of documentary frequency. The technique of trade and job analysis for content selection.

Summary and Findings--It is only within recent years that the importance of welding and cutting to the nations' industries has been recognized by the establishment in technical schools of separate faculties to teach these subjects. Even here, the major emphasis has been placed on the welding processes, with the cutting processes which are of equal importance being given a secondary role. This report established that the "cutting" process was just as important as the actual welding process.

Pendergast, Fred W., A Report on the History, Construction, and Procedure of the Investment Casting Process. Plan B, M.S., 1963, Stout State University, 49 pages: Adviser, Mr. Face.

Purposes of Study--

1. To review all of the available literature on the investment casting process.
2. To acquire a knowledge of the best methods and materials available to demonstrate the types of investment casting.
3. To design and construct the equipment needed for the investment process with available materials.
4. To experiment with the types of investment casting used in industry.

Method Used--Review of related literature.
Construction and experimentation.

Summary and Findings--It is impractical to review the history of the investment process in a yearly sequence because of the lack of chronological data written on investment casting. The inherent nature of the investment process suggests that it be included in the high school foundry and in the small industrial foundry. It was concluded that commercial investment materials are most efficient for use and experimentation. The investment processes experimented with were industrial proved investment materials; thus, little trouble was encountered in either the solid slurry investment or the ceramic shell investment.

Pluckham, Wayne, Reinforced Plastics. Plan B, M.S., 1958, Stout State University, 30 pages: Adviser, Dr. Wigen.

Purpose of Study--To provide a source book of information concerning reinforced plastics from which the industrial arts teacher can draw in setting up a plastics unit.

Method Used--The method employed in the investigation was a survey of literature from books and periodicals in the field of plastics. Industrial firms in the plastics field having literature on reinforced plastic material and processes were contacted in the study. A conference on reinforced plastic tooling held in Milwaukee by a leading plastics firm was attended, and valuable information was attained and included in the report.

Summary and Findings--This study is divided into two parts; materials for reinforced plastic work and processes of reinforced plastic work.

The materials for reinforced plastics work were based on the industrial use. A thorough study of the industrial practice was made in order to determine the various types of materials used by industry that could be used in the school shop.

The processes for this study were selected on the basis of further use in the school shop. The industrial viewpoint with the idea of the processes being modified for shop use.

From this study, it was found that the wet lay-up process was the most adaptable for use in a general shop in small schools. In larger schools, where money was not as great a problem, the other processes were incorporated into the shop.

Podolske, Melvin C., A Comparison Study of the Different Methods for Welding Stainless Steel. Plan B, M.S., 1959, Stout State University, 38 pages: Adviser, Mr. Klatt.

Purpose of Study--To determine which method of welding appears to be the most appropriate for use with different types of stainless steel in a variety of situations.

Method Used--The method employed in this study was the review of literature.

Summary and Findings--For the welding of the lighter gages of stainless steel, the oxy-acetylene method was recommended, although these materials must be properly jigged or clamped in place in order to prevent buckling. The heavier gages of stainless steel can be handled better with the use of the metallic arc method. The inert-gas arc welding process was found to be suited for the welding of either light or heavier gages providing the proper joint design is used. However, this method is more costly and therefore, may not be found in most shops.

When welding stainless steel, proper precautions should be followed for the various types being used. There is a type of stainless steel to fit every need and, in order to accomplish the desired results, recommended procedures should be followed in each case.

Popp, Richard H., Cold Type Composition For Technical Trainees At Milwaukee Institute Of Technology. Plan B, M.S., 1965, Stout State University, 31 pages: Adviser, Mr. Whydotski.

Purpose of Study--To enable non-printers to gain sufficient knowledge and skill in using cold type techniques. To enable students to become successfully trained in the technological aspects of high-speed commercial cold type composition.

Popp (continued)

Method Used--Interviews with non-union compositors, union compositors and union representatives of the International Typographic Union. Correspondence with other trade schools, readings of trade journals, and related literature.

Summary and Findings--Offset printing in Milwaulkee produces more dollar volume of printed matter than all other processes combined. This justifies setting up a complete series of cold type composition courses.

Rosenthall, Jean Sprain, Comparison of the Legal Controls in Enriched, Fortified, and Restored Food Products on the Consumer Market in the United States and in France. Plan B, M.S., 1965, Stout State University, 48 pages: Adviser, Miss Meiller.

Purpose of Study--To determine the intentional nutritive additives present in food products on the consumer market in the United States and in France and to compare the legal controls that regulate the addition of intentional nutrients.

Method Used--Review of literature.

Summary and Findings--The Food and Drug Administration, with headquarters in Washington, D. C. and le Repression des Fraudes, with main offices in Paris, France, enforce laws and regulations pertaining to the safety, purity, and wholesomeness of all food products.

Foods in the United States for which no standards of identity have been determined, must be accurately labeled with a list of ingredients. France recommends that foods be labeled so that the prospective consumers are aware of a food's additive substances.

Rowe, Frank, Development of a Thermoplastic Injection Molding Machine. Plan B, M.S., 1961, Stout State University, 41 pages: Adviser, Dr. Swanson.

Purpose of Study--To provide a thorough and complete report, in both written and illustrative form, of the problems met, the procedures followed and the results obtained in the design, construction and testing of a thermoplastic injection molding press.

Method Used--Review of literature.
Experimentation.

Summary and Findings--Results of the design and construction of the molding press proved rewarding in that the desired goals were achieved. Only minor revisions were necessary after the trial operations. Further improvements could have been in the construction of the press. The molding press can be used to effectively demonstrate the principles of thermoplastic injection in industrial arts classes. Pupil operation of the molding press was found to be both interesting and feasible.

Successful operation of the press was dependent upon controlling the variables of injection molding and gaining insight through experience.

Schaefer, Roger A., A Resource Unit on Coremaking Procedures. Plan B, M.S., 1964, Stout State University, 46 pages: Adviser, Mr. Kufahl.

Purpose of Study--To develop a resource unit that contains coremaking processes.

Method Used--The normative survey method was used.

Summary and Findings--This unit covered two wide areas, related information and coremaking processes. The related information covered core-sand, core-sand binder, core ovens, coremaking machines, and core hand tools. The processes were limited to carbon dioxide, air setting, oven baked, hot box, and shell processes.

Schemansky, Jerry, Techniques of Art and Copy in Offset Lithography. Plan B, M.S., 1958, Stout State University, 46 pages: Adviser, Mr. Whydotski.

Purpose of Study--To bring forth the various techniques of graphic illustration, art work, and other processes that can be incorporated into the teaching of offset lithography.

Method Used--The method was the survey of literature written about offset lithography, art work, and copy preparation.

Summary and Findings--It is impossible to arrive at any definite rules governing the technique to use in the preparation of copy for offset lithography. Each particular job requires a different treatment to achieve the desired final effect. Practice in the various art techniques, plus knowledge of the potentialities of each, will enable greater range of application in offset lithography.

Schlice, Willard A., Copy Techniques, Equipment and Supplies Necessary To Incorporate Instruction In Photo-Lithography To The Existing Graphic Arts Department At P. J. Jacobs High Shhool, Stevens Point, Wisconsin. Plan B, M.S., 1962, Stout State University, 36 pages: Adviser, Mr. Whydotski.

Purpose of Study--To investigate the various copy techniques for photo-lithography to learn what they are and how to do them, the equipment needed and its cost.

Method Used--Survey of literature.
Experiments using different methods.

Summary and Findings--The role played by photo-lithography in the printing industry today precludes any other conslusion than that a course in photo-lithography should be added to the graphic arts department.

Schlottmen, James A., A Study of Sensitized Carbon Tissue As a Silk Screen Stencil for Graphic Arts Education. Plan B, M.S., 1960, Stout State University, 60 pages: Adviser, Dr. Wigen.

Purpose of Study--

1. To establish the position of photo-stencil silk screening in education.
2. To show the methods of producing copy for photo-stencil silk screening.
3. To establish a procedure for producing a photo-stencil from pigmented gelatin coated paper better known as carbon tissue.

Method Used--Review of literature.

Summary and Findings--Photo-stencil silkscreening of the transfer type has gained popularity since 1946. It has proved itself a revolutionary discovery on a par with presensitized plates for the offset lithography industry. Because silkscreening has become a major industry in the graphic arts field, it is now demanding that the schools help to prepare young people to understand and work in this vocation.

Copy for photo-stencil silkscreening can be photographic or hand made. It can be line or halftone copy. Since a positive copy is necessary and the normal product of a camera is a negative, the procedure for photographic copy is to make up the copy, photograph the copy with a copy camera, and contact print the negative to produce a positive. Hand made positives can be commercial positives, tracings, or any method of producing the positive without the use of a camera.

Carbon tissues transfer type silk screen stencils are made first, sensitizing the carbon tissue, then exposing the sensitized tissue, etching, and then applying the finished stencil to the silk screen fabric. Though the carbon tissue photo-stencil can be made by both the wet and dry methods, there is little difference between the two methods other than the fact that the dry tissue is much more sensitive than the wet and therefore it must be used in a darkroom.

Schrank, Holly L., An Investigation of the Effects of Various Home Laundry Products on the Strength and Whiteness Properties of Bleached Cotton Percale Sheeting. Plan B, M.S., 1965, Stout State University, 86 pages: Adviser, Dr. Barra.

Purpose of Study--To determine and compare the effects of chlorine bleach, non-chlorine bleach, ammonia, and bluing on the strength, abrasion resistence and whiteness retention of bleached cotton percale sheeting.

Method Used--Experimentation.

Summary and Findings--The results of this study indicated that the best product to use on bleached cotton percale sheeting when strength and whiteness are important and when the fabric is ironed after each laundering is Beads of Bleach. The fabric did not shrink significantly, in fact, after five laundry cycles, it stretched in both directions. In general, the strength of the Beads of Bleach specimen was average or above in relation to the other specimens. Only the abrasion resistance was significantly lower than the other samples.

Siewert, Carol H., A Comparison of the Performance and Properties of Chemically Treated Cotton and Polyester-Blended Fibers After Wear and Laundering With Laboratory Washed Shirts. Plan B, M.S., 1965, Stout State University, 94 pages: Adviser, Dr. Barra.

Purpose of Study--To test the performance and kind of consumer satisfaction received from three different wash-and-wear fabrics found in men's white, dress shirts.

Method Used--Review of literature and experimentation.

Summary and Findings--With few exceptions the shirts that were worn had lower breaking strength in the warp and filling than the unworn shirts. Indications are that a fabric should be used in the garment for which it was intended before a true evaluation of its performance and properties can be determined.

Smith, Brandon B., Bent Wood Laminating. Plan B, M.S., 1962, Stout State University, 130 pages: Adviser, Dr. Swanson.

Purpose of Study--This study is concerned with a solution of the problem of adapting procedures for bent wood laminating to industrial arts.

Method Used--Documentary survey of literature.
Normative survey of adhesive companies and research laboratories.
Experimentation.

Summary and Findings--

1. The time required to produce laminated members can be greatly reduced by using hot press curing procedures, thus increasing efficiency of production.
2. Laminated members may be produced by the forming role with very promising results when contact bonding adhesives are used to obtain a bond.
3. Various contact cements were proven to be relatively durable and possess a degree of water resistance; thus, laminated members bonded with these adhesives may be relatively unlimited for the various conditions to which they will be subjected.

Stahlkopf, Wayne H., A Gypsum Cement Die for Embosing Leather. Plan B, M.S., 1963, Stout State University, 22 pages: Adviser, Dr. Swanson.

Purpose of Study--To develop economical dies which can be used by pupils in industrial arts classes to emboss leather and by industrial arts instructors to demonstrate the embossing process in leatherwork.

Method Used--Review of literature and experimentation.

Summary and Findings--Gypsum cement was found to be a very good leather embossing die medium. Embossing with a gypsum cement die was a practical junior or senior high school class activity.

Stevenson, Donald W., A Study Of The Desirability Of Solder, Commerical Plastics, and Putties In Body Repair Work. Plan B, M.S., 1961, Stout State University, 33 pages: Adviser, Mr. Morical.

Purpose of Study--To test and discover the qualities of solders, commercial plastics, and putties in body repair work. To compare solders, plastics, and putties as to method of application, length of drying period and the durability of the repaired area. To gather information on do's and don'ts in order to promote the best results when using solder, plastic and putty. To seek a product and method of repairing damaged automobile surfaces that would speed up body repair work and at the same time maintain efficiency and satisfactory results. To provide worthwhile material for college and vocational instructors of auto mechanics.

Method Used--Normative survey type research done by documentary frequency and experiment.

Summary and Findings--Plastic is widely used in the automotive body repair work. Putty is used for filling surfaces that cannot be filled with surface or primer-surfacer. Solder is not used widely because of its undesirable process of applying. Of the process studied, the use of plastic is advancing the most rapidly. The cost of solder is much greater than the cost of plastic filler. Solder may be used more successfully where the time factor and cost are not critical factors.

Stolzel, Donald R., Starting Proficiency of the Transistor Controlled Magnetic Pulse Ingition System. Plan B, M.S., 1965, Stout State University, 16 pages: Adviser, Mr. Morical.

Purpose of Study--To select appropriate testing equipment which would allow accurate recording of conclusion-forming data.

Method Used--Review of literature and experimentation.

Summary and Findings--The study produced no data contrary to the original hypothesis. The data displayed a high level of engine starting proficiency on the transistor controlled magnetic pulse ignition system.

Sucharski, Micheal, A Report on the Construction and Operation of a Shell Molding Machine in a Non-Ferrous Educational Foundry Laboratory. Plan B, M.S., 1961, Stout State University, 63 pages: Adviser, Mr. Face.

Purpose of Study--

1. To examine the processes and machines used in the foundry industry for the shell process of molding.
2. To design and construct a shell molding machine in an educational laboratory with readily available materials.
3. To use and perfect a shell molding operation in the educational foundry laboratory.
4. To ascertain the best methods and materials available to adapt shell molding from the industrial factory to the school foundry laboratory.

Sucharski (continued)

Method Used--Review of literature.
Experimentation.

Summary and Findings--The operation of the shell molding process in the educational foundry laboratory can be a dream, or it can be a nightmare. The success or failure of the process depended on the preparation of the equipment before the class used the machine. Factors which careful check must be made are temperature, resin sand mixture, and time of sequences in the process. The best particulars for each of the above points of operation have to be discovered by individuals through experimentation because the process varies to many local environmental conditions.

Tews, Robert K., Noise Control of Small Gasoline Engines. Plan B, M.S., 1965, Stout State University, 33 pages: Adviser, Dr. Kuehl.

Purpose of Study--To compile suggested methods of sound control from manufacturers of small gasoline engines and from manufacturers of sound control materials. To catagorize these suggestions into a workable listing of sound control techniques. To explore the methods by which these sound control techniques might be implemented.

Method Used--Review of literature.
Letter of inquiry to manufacturers asking for their experiences and suggestions.

Summary and Findings--This study confirmed that small engine noise can be controlled to the point where noise levels no longer interfere with communication and learning. It must be remembered that these are laboratory results and may differ from the results obtained by the power mechanics instructor who uses them in the classroom. Although the results differ, they should not differ significantly.

Tennessen, Sister Mary Lelia, A Comparative Study of the Acrylic and Polyester Generics of the Manmade Fibers. Plan B, M.S., 1962, Stout State University, 36 pages: Adviser, Dr. Barra.

Purpose of Study--To isolate two generics of the present sixteen generics of manmade fibers, as catagorized by the Federal Trade Commission, to compare their similarities and differences, their advantages and disadvantages.

Method Used--The method used in this research project was the normative survey on documentary research and a review of available current literature of educational materials issued by the textile industry, of current magazines in this area, and of textbooks, circulars, bulletins, and annuals in the field of the new manmade fibers.

Summary and Findings--The knowledge gained by the isolation of each of the two generics, and the comparison of them with each other cannot be measured. Out of the hodgepodge of trademarks of the synthetic fibers, has come the understanding of all of them. Next to nylon, acetate, and rayon, the acrylics and the polyester generics are the ones heard of most. It is in their blending power that these fibers will continue to grow. Blends with other synthetics, blends with natural fibers, and this mixing will make the fibers present more functional.

Thompson, Gary D., A Comparison of Transistor Ignitions to Standard Ignition Systems. Plan B, M.S., 1964, Stout State University, 20 pages: Adviser, Mr. Morical.

Purpose of Study--To discover if the manufacturers were truthful about the benefits which they claimed transistor ignitions yield.

Method Used--Review of literature.

Summary and Findings--It appears that transistor ignitions promote easy cold weather starting and greatly reduce maintenance.

Todd, Rita L., An Investigation of the Effects of Various Home Laundry Bleaches on Properties of Cotton Muslin Sheeting. Plan B, M.S., 1963, Stout State University, 54 pages: Adviser, Dr. Barra.

Purpose of Study--It was the purpose of this study to determine the effect of oxygen, sodium hypochlorite, and dry chlorine bleaches on the strength and abrasion resistance of cotton muslin sheeting.

Method Used--Review of literature and experimentation.

Summary and Findings--The Purex sample usually seemed to show great loss of strength after the fifteenth cycle, additional bleaching and subsequent tests might be carried on with the Purex bleach or other bleaches to find how many bleachings a fabric could withstand before it became unuseable.

Additional information might be obtained by adding a test for elongation to the study, since the study was concerned chiefly with changes in strength. The effectiveness of the various bleaches in whitening the cloth was not tested because of lack of equipment, but this would be vital information in evaluating the effectiveness of the bleach.

Treise, Edward G., Equipment and Procedure for the Free-Blowing Method of Forming Acrylic Plastics. Plan B, M.S., 1955, Stout State University, 41 pages: Adviser, Dr. Wigen.

Purpose of Study--To review the methods used by industry in pressure-differential forming of thermo-plastics and to design and construct equipment suitable for free-blowing of acrylic plastic in the school shop with air pressure. Further, it is the purpose of this study to revise industrial processes in pressure-differential forming so as to adapt them for use in the school shop.

Treise (continued)

Method Used--A survey of literature was conducted to determine the information available relating to the problem of pressure differential forming of acrylic plastic.

Letters were written to leading manufacturers of acrylic plastic and also to the publishing house which issues periodicals in the field of plastics.

Experimental method of research was used to develop the equipment for free-blowing of acrylic plastic with air pressure. The equipment was constructed, tested, and modified to improve its operation.

Industrial procedures and operations were studied and modified to adapt them for use with the free-blowing method in the school shop.

Summary and Findings--

1. The use of free-blowing equipment in the general shop is practical in regard to time consumed and operational cost.
2. The use of free-blowing equipment in the general shop will provide students with a basic understanding of an expanding industrial process in the plastics field.
3. Construction of satisfactory free-blowing equipment can be accomplished in the school shop without difficulty.
4. The use of free-blowing in the school shop will broaden the course content of the plastics area of the general shop and introduce a forming method closely paralleled to industrial methods.

Vanis, Joseph K., A Survey of the Laminated Wood Industry. Plan B, M.S., 1963, Stout State University, 58 pages: Adviser, Dr. Swanson.

Purpose of Study--To collect and analyze the commercial field of wood laminating and its associated literature in order to collect materials that would be of value to industrial arts teachers and students.

Method Used--Review of related literature.

Summary and Findings--Continued experimentation and critical evaluation of the products of laminating revealed a number of advantages laminates have over solid wood products.

Such adhesives as phenol, resorcinol, urea, and melamine resins that were developed prior to the end of World War II provided the basis for many new applications of laminating. Before the discovery of these resins, there was a serious doubt as to the question of the durability of the older adhesives when exposed to cyclic soaking and drying.

Because the new adhesives require curing temperatures above those existing under assembly room conditions, a great variety of heating facilities have been produced. Such devices as heated curing rooms, heating pads, and high frequency heating equipment aided in curing the glue and also made it possible to speed up production.

Visser, Gerald M., A Survey of Foreign Woods Available For Woodworking. Plan B, M.S., 1961, Stout State University, 25 pages: Adviser, Dr. Swanson.

Visser (continued)

Purpose of Study--To formulate an index of foreign furniture woods and to show that these woods can be used as substitutes for certain woods presently being used in the manufacture of furniture.

Method Used--Survey conducted.
Review of literature.

Summary and Findings--Foreign furniture woods were regrouped so that their three characteristics matched those of either walnut, mahogany, or maple. The formulated lists of woods can be considered as possible substitutes for each of the woods mentioned above.

Verkuilen, Vernon R., A Resource Unit in Oxyacetylene Brazing in a Senior High School. Plan B, M.S., 1963, Stout State University, 19 pages: Adviser, Mr. Klatt.

Purpose of Study--To identify and select materials to be included in a resource unit on brazing in a senior high school metal shop.

To act as a guide for teachers in the field who are interested in a selected souree of information of oxyacetylene brazing.

Method Used--The normative survey was used in the development of this resource unit.

Summary and Findings--Oxyacetylene hand torch brazing is a well used process in the repair and fabrication of metal parts. This study was an attempt to impress its importance in a high school metals course.

The resource unit provides material for the industrial arts instructor which will enable him to meet the increasing needs of the modern teaching situation, and help to fulfill the students' quest for knowledge.

Viens, Betty, A Review of the Literature Concerning Selected Food Additives in Beef, Pork, and Poultry. Plan B, M.S., 1961, Stout State University, 37 pages: Adviser, Miss Meiller.

Purpose of Study--To further the understanding of additives used in meats and their functions and effects in the meat supply of the consumer.

Method Used--Review of literature.

Summary and Findings--Government agencies are regulating the use of additives in meats and, although there has been concern as to the safety of additives, it appears that the regulations provide adequate protection for the consumer.

Additives which have been in use for many years are not as important for their preserving qualities as formerly and are used in lesser amounts to produce flavor and color characteristics of the meat. The use of the newer antibiotic preservatives in meats have increased the shelf life of meats and poultry. The use of tenderizers, although limited, have improved the quality of meats and made them more acceptable to the homemaker.

Walley, Bruce, Marbling as an Art and as a Unit for Classroom Bookbinding. Plan B, M.S., 1963, Stout State University, 105 pages: Adviser, Mr. Whydotski.

Purpose of Study--To test the hypothesis that the marbling of paper can be done successfully, economically, and effectively in the classroom and to develop a procedure plan for performing the art.

Method Used--The methods used in this study were principally experimental and descriptive.

Summary and Findings--Results from using the home constructed equipment favorably indicated that marbling tools could be inexpensively made in the school shop; in addition, their construction provided distinct learning units beneficial to the individual involved in making the equipment.

This study investigated marbling history and techniques. The included knowledge, if nourished, could lead to the development of a skill and could contribute to the preservation and appreciation of the art.

Widule, Thomas J., A Study of Industrial Metallizing and Its Application in Industrial Education. Plan B, M.S., 1965, Stout State University, 25 pages: Adviser, Dr. Rudiger.

Purpose of Study--To analyze the basic processes of metallizing and to illustrate how the important elements of industrial metallizing could be incorporated into present technical and vocational education programs.

Method Used--Review of related literature.

Summary and Findings--Importance of use of metallizing applications is growing tremendously. The results of the study suggested that only the advanced students in the metals program be instructed in actual operation of metallizing.

Williams, Thomas J., Recent Technological Advances in Metal Removing Processes. Plan B, M.S., 1962, Stout State University, 56 pages: Adviser, Dr. Wiehe.

Purpose of Study--To investigate the technical journals and trade magazines to identify, describe, and determine the extent of use of new metal removing processes, and to put these findings into readable and understandable form.

Method Used--A survey of all literature available on the new industrial process.

Summary and Findings--Most of the new developments have come as the result of two industries, the machine tool industry and the aviation industry. Many of these developments are not entirely new in theory, but have recently come into their own as a result of new demands for space age materials. Of the new processes developed, six of the most predominant ones, as shown by the review of literature, were selected for study. The six selected were chemical mill, hot machining, sub-zero machining, electro-discharge machining, electrolytic grinding, and ultrasonic impact grinding.

The material analyzed and reported was put into outline form to aid instructors in developing instructional course units.

Wood, Roger, Proposed Interior Wood Finishes for use in a Junior High Woodworking Shop. Plan B, M.S., 1963, Stout State University, 35 pages: Adviser, Dr. Prichard.

Purpose of Study--To find finishing materials to produce an adequate finish in the prevailing conditions of most junior high woodworking shops.

Method Used--Review of literature.
Letter of inquiry.

Summary and Findings--This study reported the composition and characteristics of fourteen interior wood finishes. Experiments were conducted by applying the finish to six selected wood panels. Small amounts of different liquids used in homes were applied to the finished surfaces to test resistance of the finishes. Each finish was also checked for its resistance to marring and for its quality for producing a polished surface.

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